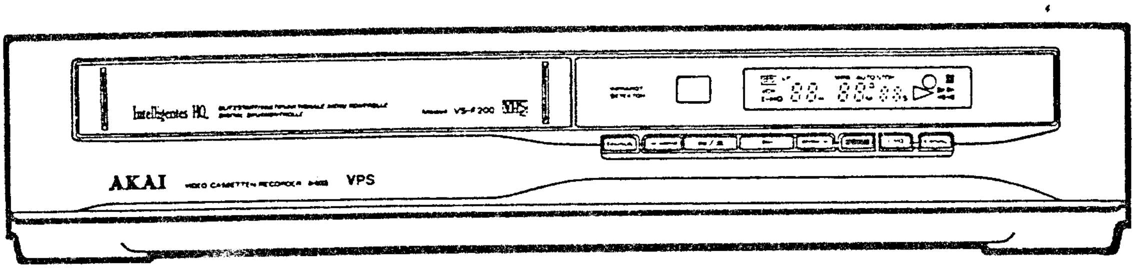
AKAI SERVICE MANUAL


Intelligentes HQ
VS-F200
AKAI
VPS

HQ HIGH QUALITY
VHS PAL

MODEL VS-F200EOG

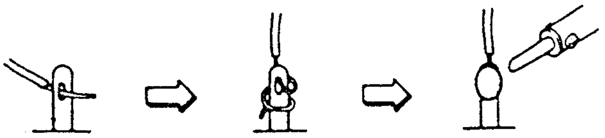
VIDEO CASSETTE RECORDER

MODEL VS-F180EO
MODEL VS-F190EOH
MODEL VS-F200EOG
MODEL VS-F220EOH/EDG
MODEL VS-F222EA
MODEL VS-F230EOH
MODEL VS-F240ES

☆SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions.

The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot. All other household batteries can be thrown out with the household waste.

★SPECIFICATIONS

Format	
EA/ES	VHS standard
EO/EOH/EOG/EDG	VHS standard (PAL, MESECAM)
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary heads	2 video heads
RF. input	
EA	System B, G VHF ch 0 - 5, 5A, 6 - 11 UHF ch 21 - 69
ES	System I VHF ch A - J (Ireland) ch 4 - 13 (South Africa) UHF ch 21 - 69
EDG	System D, K VHF ch 1 - 12, UHF ch 21-69 System B, G VHF ch 2 - 12, UHF ch 21-69
EO/EOG	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12 UHF ch 21 - 69 Cable ch S1-S3', S1-S20
EOH	System B, G (PAL, SECAM) VHF ch 2 - 4,5 - 12 UHF ch 21 - 69 Cable ch S1'- S3',S1 - S41
RF. output	
EA	System B type modulation VHF ch 0,1 switchable (preset ch 1)
ES	System I type modulation UHF ch 30 - 39 adjustable (preset ch 36)
EDG	System K/G type modulation UHF ch 30 - 39 adjustable (preset ch 36)
EO/EOH/EOG	System G type modulation UHF ch 30 - 39 adjustable (preset ch 36)
Recording (line input)	
EA/ES	PAL
EO/EDG/EOG/EOH	PAL, SECAM (MESECAM Tape)
Playback (line output)	
EA	PAL
ES	PAL NTSC 4.43 (NTSC Tape) Simulated PAL (NTSC Tape playback only)
EO/EDG/EOH/EOG	PAL,SECAM (MESECAM Tape)
Video	
Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
Line output level	1.0 Vp-p/75 ohms, unbalanced
S/N ratio	More than 45 dB
Horizontal resolution	More than 250 lines

Audio	
Line input level	−6dBs/50 k ohms, unbalanced
Line output level	−6dBs/1 k ohms, unbalanced
S/N ratio	More than 40 dB
Frequency response	70 to 10,000 Hz
Recording/playback time.	
EA/EO/EOH/EOG/EDG	240 min. with E-240 cassette
CCIR (ES)	240 min. with E-240 cassette
NTSC playback only (ES)	160 min. with T-160 cassette
Tape speed	
EA/EO/EDG/EOH/EOG	23.39 mm/sec
CCIR (ES)	23.39 mm/sec
NTSC (ES)	33.35 mm/sec
Quick finder	
EA/EO/EOH/EOG/EDG	Approx. 9 times normal speed
CCIR (ES)	Approx. 9 times normal speed
NTSC (ES)	Approx. 7 times normal speed
FF, REW time	Approx. 5 min. with E-180 cassette
Timer	
Programme	8 programme / 1 year
Clock reference	Quartz crystal
Display	TV screen & FL (Tape counter, Timer etc.)
Power requirements	
EA	240 V AC,50 Hz
EO/EOH/EOG	220-230 V AC, 50 Hz
ES/EDG	220 V AC, 50 Hz
Power consumption	
EA/ES/EDG	36 W
EO/EOH/EOG	37 W
Operating temperature	5°C - 40°C
Dimensions	
EA	425 (W) x 82 (H) x 313 (D) mm
F220 (EOH)	425 (W) x 82 (H) x 312 (D) mm
ES/EDG/EOG/ EO/F230 (EOH)	425 (W) x 82 (H) x 320 (D) mm
Weight	5.0 kg

Standard accessories

Antenna cable	1
Remote control unit	1
Batteries for remote control	2
Operator's manual	1

0 dBs = 0.775 V

*For improvement purposes, specifications and design are subject to change without notice.

★INFORMATION

SYMBOLS OF MODEL NAME FOR PRIMARY DESTINATION

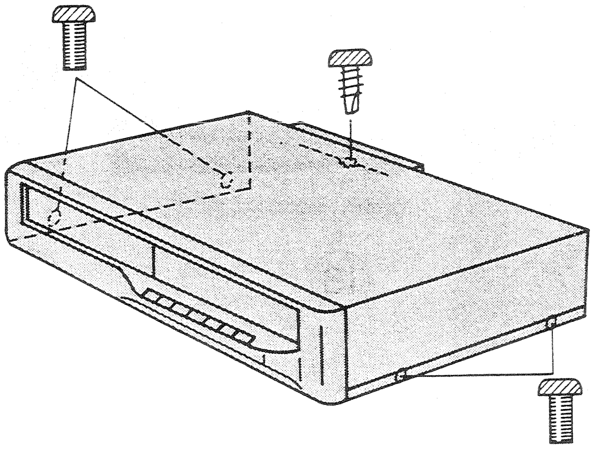
Symbol indicates the destination of the units as listed below.

Symbol	Power Classification	Principal destination	TV System	
			Color	Broadcast
EA	S	Australia	PAL	B,G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D,K
EDI	E	China, Hong Kong	PAL	D,K,I
EG	E	Spain, Northern Europe, Other	PAL	B,G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong kong		
EM	E	Middle East	PAL	B,G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B,G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B,G
	V	Italy		
EOG	V	Germany	PAL	B,G
ES	E	South Africa, Ireland, Hong kong	PAL	I
EV	E	South-East Asia	PAL	B,G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B,G
EGN	E	Middle East	PAL,NTSC	B,G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K,K1
SEG	E	France, Switzerland	SECAM,PAL	L,B,G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

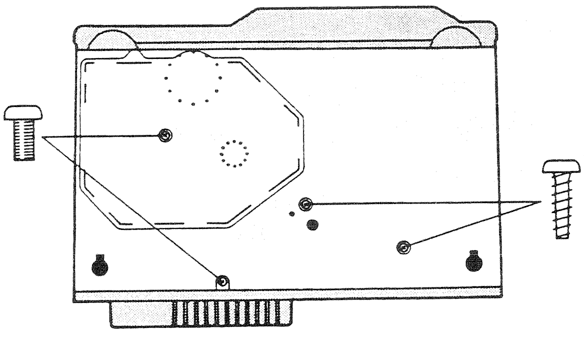
I. DISASSEMBLY

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.
When reattaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

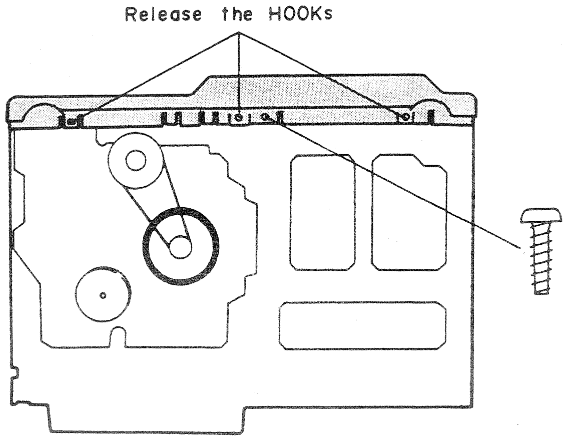
1. Removal of UPPER COVER

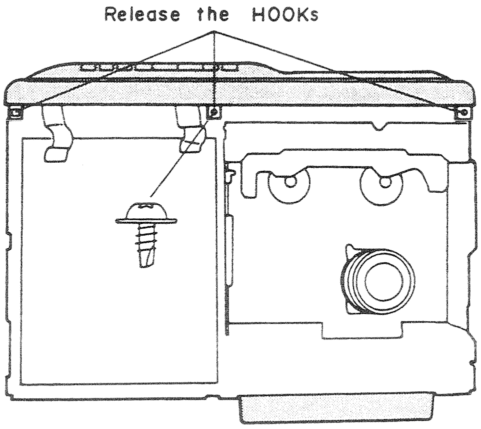


2. Removal of BOTTOM COVER

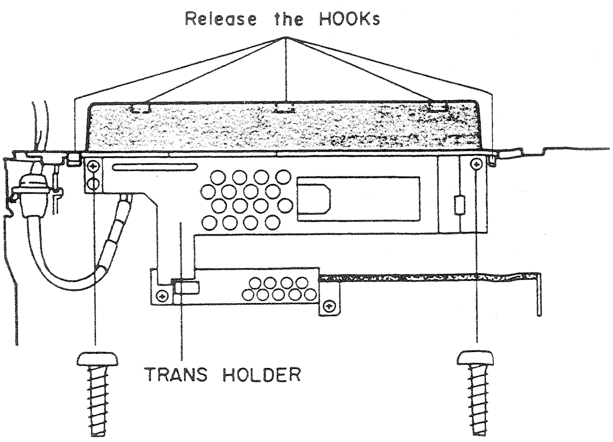


3. Removal of FRONT PANEL


Release the HOOKs


Release the HOOKs

4. Removal of TRANS COVER


Release the HOOKs
TRANS HOLDER

II. PRINCIPAL PARTS LOCATION

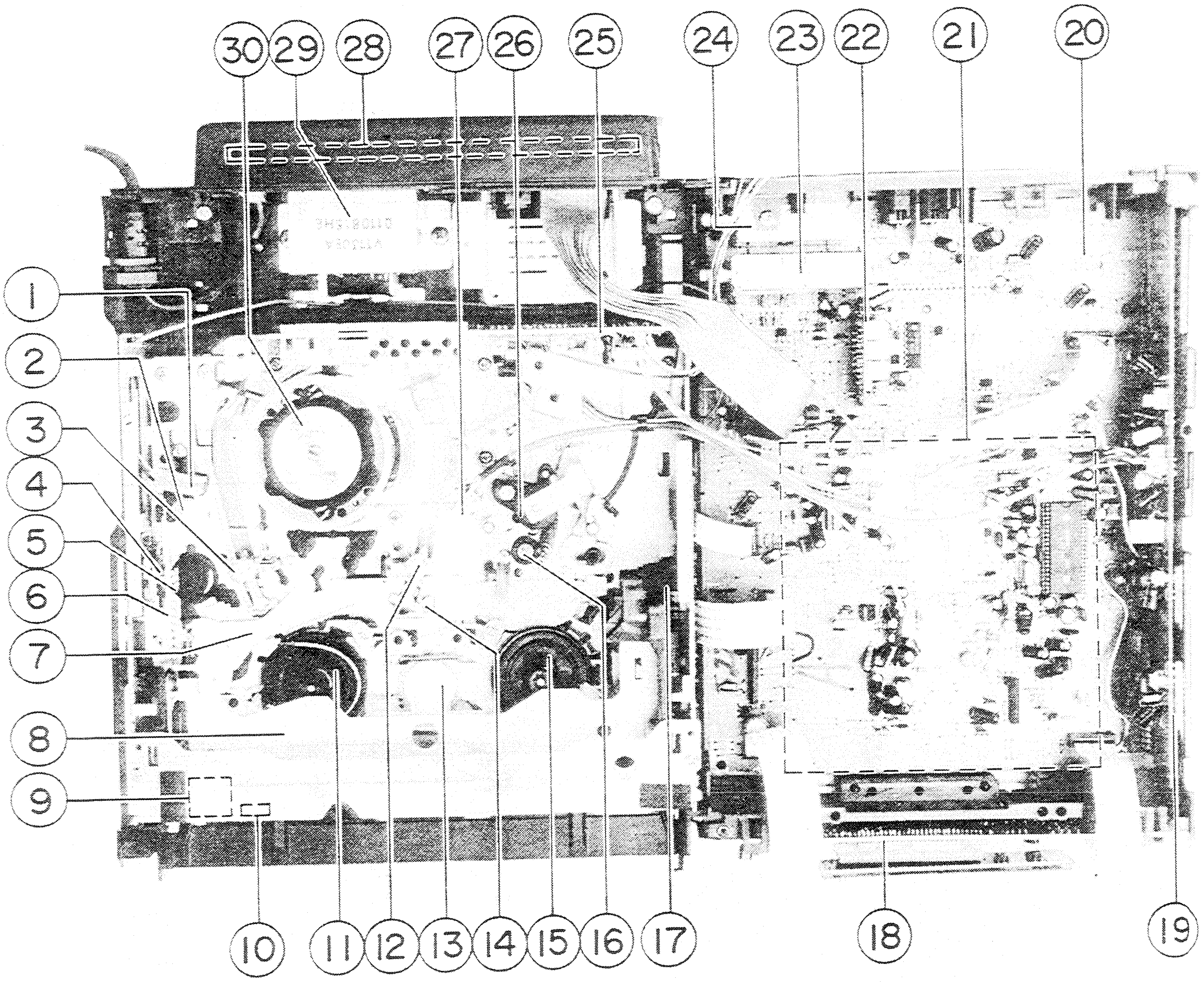


Fig. 2-1 Top view

1. FULL TRACK ERASE HEAD
2. SUPPLY TAPE GUIDE
3. SUPPLY LOADING LEADER
4. SENSOR (S) PCB (END SENSOR)
5. FRONT LOADING GEAR
6. FRONT LOADING SLIDER
7. TENSION ARM
8. CASSETTE LOAD BLK
9. LOADING MOTOR
10. REC SAFETY SWITCH
11. SUPPLY REEL TABLE
12. TAKE UP LOADING LEADER
13. IDLER PART
14. SENSOR LED
15. TAKE UP REEL TABLE
16. CAPSTAN MOTOR
17. SENSOR (T) (START SENSOR)
18. OPERATION (A) PCB
19. MAIN (B) PCB
20. MAIN (A) PCB
21. VPS PCB (OPTION)
22. VIF UNIT
23. TUNER UNIT
24. RF CONVERTOR UNIT
25. PRE AMP PCB
26. PINCH ROLLER
27. AUDIO / CONTROL / S. ERASE HEAD
28. POWER SUPPLY PCB
29. POWER TRANSFORMER
30. VIDEO HEAD DRUM BLOCK

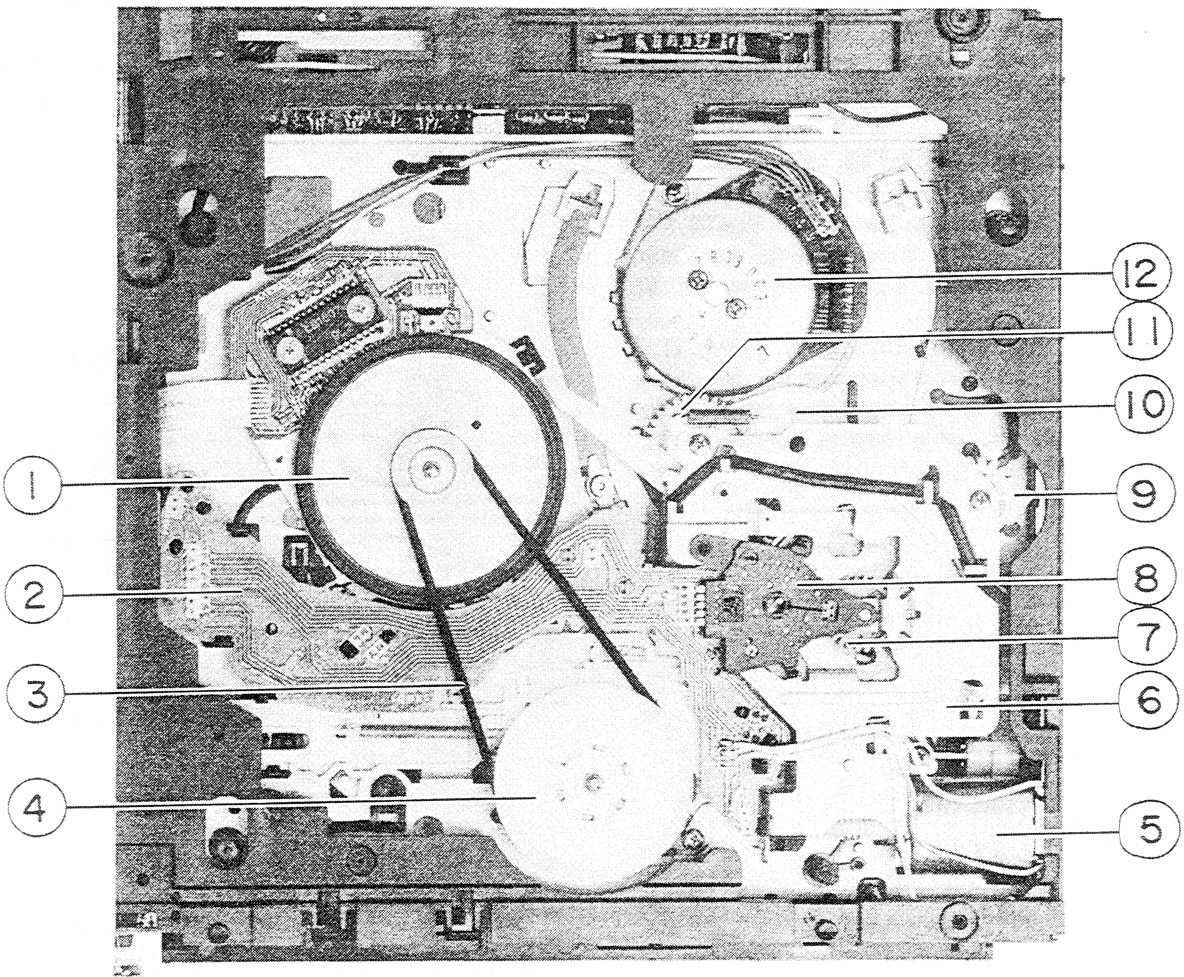


Fig. 2-2 Bottom view

1. CAPSTAN MOTOR BLOCK
2. SENSOR PCB
3. CAPSTAN BELT
4. CLUTCH DISK PART
5. LOADING MOTOR
6. LOADING DRIVE BLOCK
7. CAM SLIDER GEAR
8. MODE SELECT SWITCH
9. FRONT LOADING GEAR
10. TOGGLE (S) GEAR BLOCK
11. TOGGLE (T) GEAR BLOCK
12. DRUM MOTOR BLOCK

III. MAIN COMPONENTS REPLACEMENT

3-1. REMOVAL OF THE EJECTOR BLOCK

* Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

3-1-1. Removal of the CASSETTE LOAD BLK

1) Remove the two Ⓐ screws on the UPPER PLATE as shown in Fig. 3-1 then remove the UPPER PLATE.
2) Lift up the FRONT GUIDE while pushing the CASSETTE LOAD BLK backward, then remove the FRONT GUIDE.
3) Lift up the front side of the CASSETTE LOAD BLK gently then remove it. To avoid damaging the pins of the CASSETTE LOAD BLK and the groove of the MECHA. FRAME, do not add excessive force to the CASSETTE LOAD BLK when removing it.

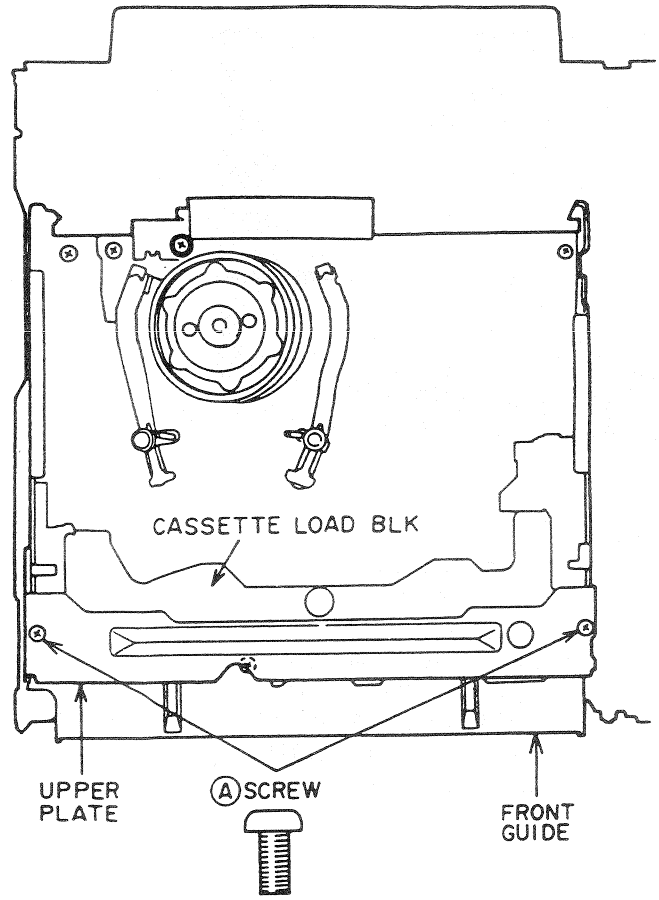


Fig. 3-1

3-1-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (Refer Fig. 3-2) by pressing the stopper tab with a flat head (—) screwdriver. Then remove the shaft's right end from the bracket.

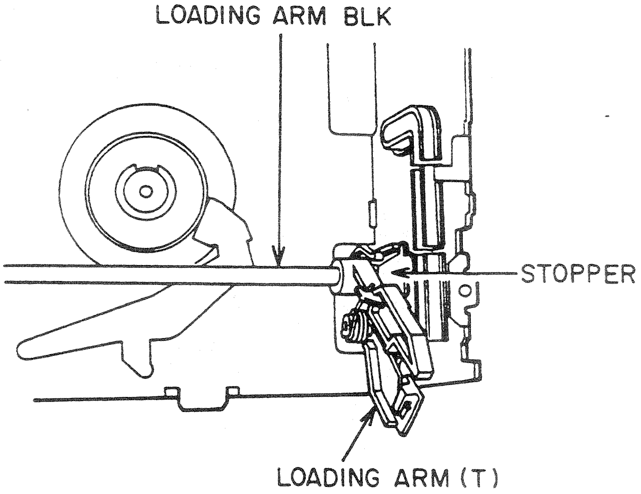


Fig. 3-2

2) Hold the LOADING ARM (T) and turn it 30 degrees clockwise, then pull out the shaft's left end from the bracket. To avoid damaging the JOINT GEAR and EJECT GEAR, take special care when removing. (Refer Fig. 3-3)

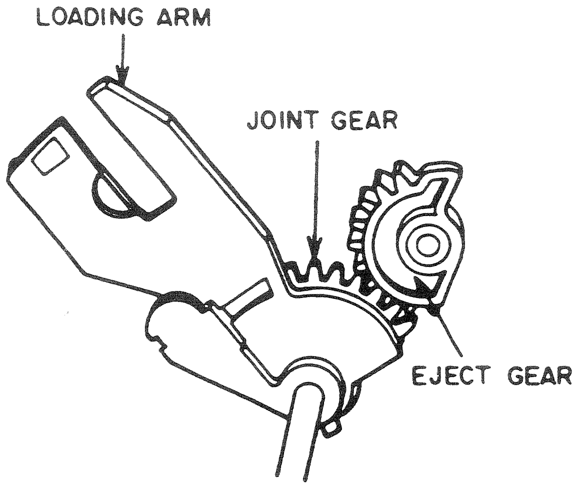


Fig. 3-3

3-2.REMOVAL OF THE SENSOR PC BOARD

* Before proceeding with removal of the SENSOR PCB the loading mechanism must be set to the "unloaded" position (the position where the CAM SLIDER GEAR's groove mark is visible through the hole of the MODE SELECT SW.) as shown in Fig. 3-4.

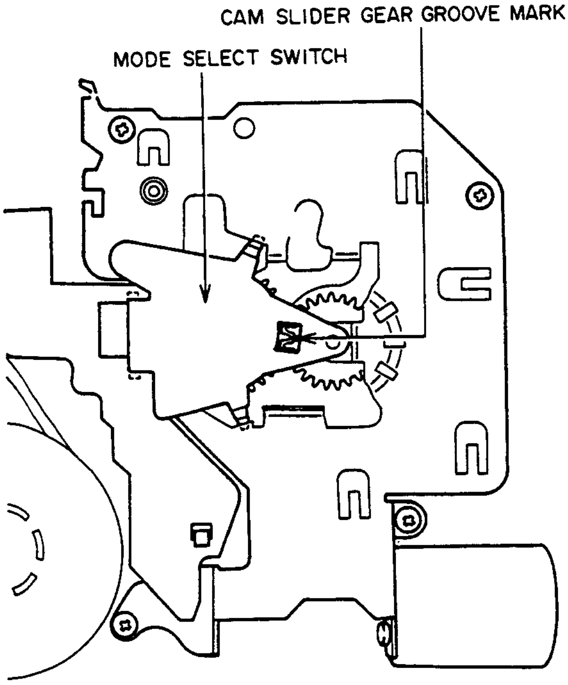


Fig. 3-4

To set the loading mechanism to the "unloaded" position, proceed with one of the following 1) or 2) procedures.

1) Insert a video cassette tape which you no longer need. Once the tape has been loaded or has entered the "play" mode press the POWER button to turn the power off. Disconnect the AC power plug from the AC socket after the cassette tape has been unloaded.
2) Remove the UPPER PLATE, FRONT GUIDE and CASSETTE LOAD BLK. (Refer to 3-1-1. Removal of the CASSETTE LOAD BLK.)
   Plug in the AC power cord. The LOADING ARM BLK will move backward and then both the LOADING LEADERs will be set to the "tape loaded position" automatically. Wait more than 10 seconds. (After the PINCH ROLLER is disengaged from the CAPSTAN and the SUPPLY REEL stops its rotation, the mechanism is set to "stand-by".)
   Press the RESET button on the OPERATION PCB.
   The mechanism will be set to the "tape unloaded position" thereafter.
   Disconnect the AC power plug from the AC power soket.

3-2-1. Removal of the MODE SELECT SWITCH

1) Release the two Ⓐ stoppers as shown in Fig. 3-5.

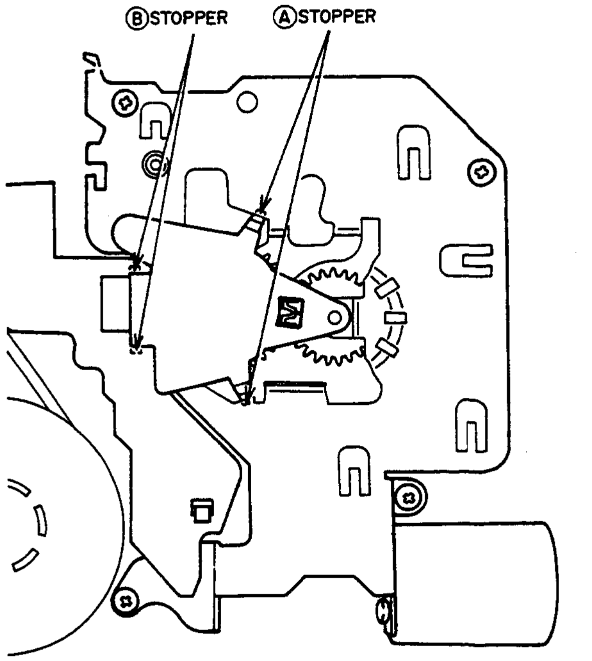


Fig. 3-5

2) Release the two Ⓑ stoppers carefully while pulling up the MODE SELECT SWITCH. Then remove the MODE SELECT SWITCH. (Do not damage the pins of the MODE SELECT SWITCH or the connector P1 on the SENSOR PCB).

3-2-2. Removal of the SENSOR PC Board

1) Disconnect the connector P303 on the MAIN PCB.
2) Remove the capstan belt.
3) Release the Ⓐ , Ⓑ and Ⓒ stoppers as shown in Fig. 3-6. Then remove the SENSOR PCB.

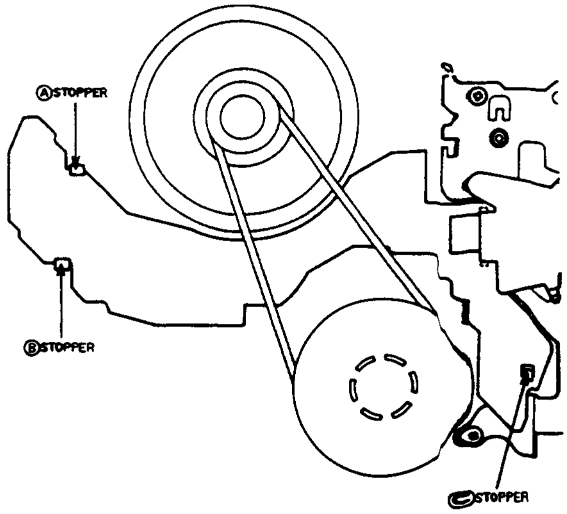


Fig. 3-6

3-3.REMOVAL OF THE LOADING DRIVE BLK

Set the loading mechanism at the "unloaded" position as well as 3-2 (REMOVAL OF THE SENSOR PC BOARD). However this time, to avoid damaging the tape and mechanical parts, refer to 3-2, *(2) only.

1) Remove the MODE SELECT SWITCH in the same manner as 3-2-1 (Removal of the MODE SELECT SWITCH).
2) Unhook the five wires from each tab. Two wires from the SENSOR(S), two wires from the LOADING MOTOR and one wire from the REC SAFETY SWITCH.
3) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws, then remove the LOADING DRIVE BLK as shown in Fig. 3-7.

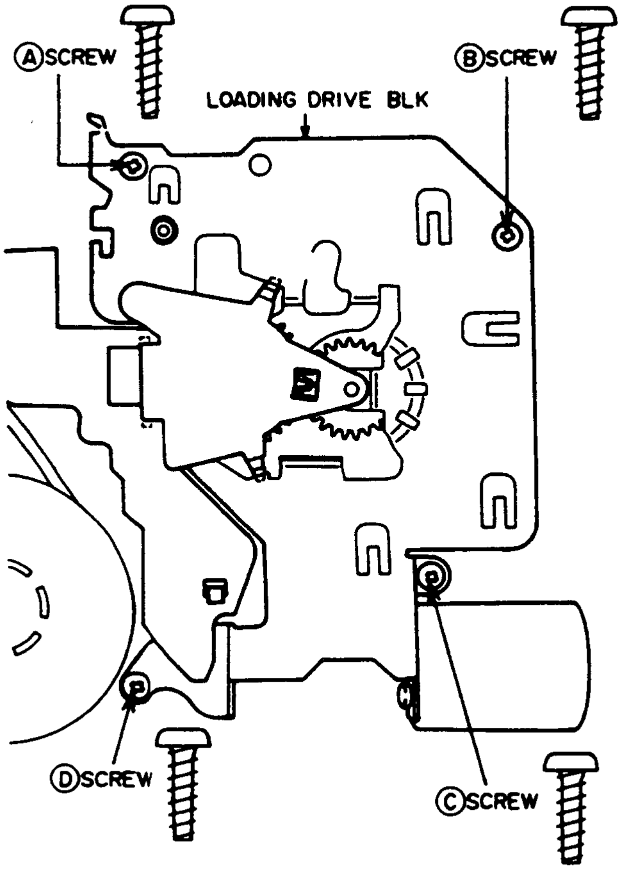

ⒶSCREW
ⒷSCREW
LOADING DRIVE BLK
ⒹSCREW
ⒸSCREW

Fig. 3-7

3-4.REASSEMBLY OF THE LOADING MECHANISM BLK

3-4-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEAR (T) and TOGGLE GEAR (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig. 3-8

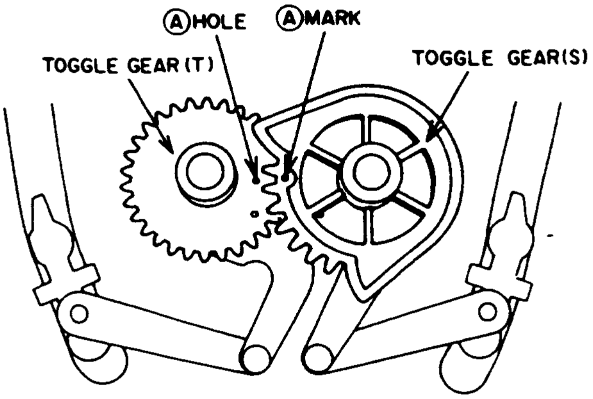

ⒶHOLE
ⒶMARK
TOGGLE GEAR (T)
TOGGLE GEAR(S)

Fig. 3-8

3-4-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 3-9.

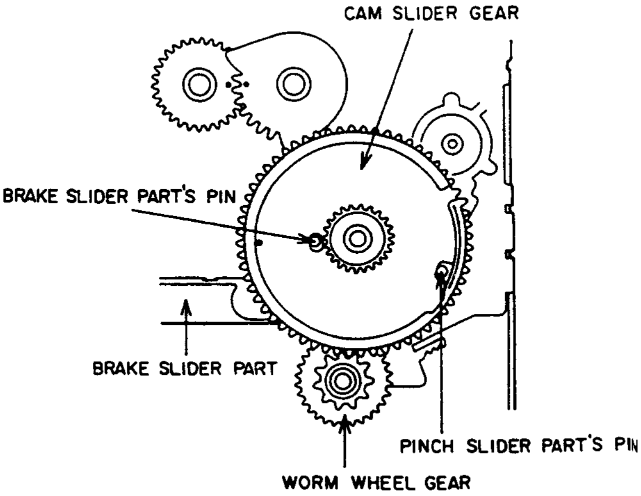

CAM SLIDER GEAR
BRAKE SLIDER PART'S PIN
BRAKE SLIDER PART
PINCH SLIDER PART'S PIN
WORM WHEEL GEAR

Fig. 3-9

2) Set the CAM SLIDER GEAR. At this time, adjust the position of the BRAKE SLIDER PART and PINCH SLIDER PART so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig.3-9.

3) Attach the FRONT LOADING GEAR as shown in Fig. 3-10. At this time, align the Ⓑ mark on the FRONT LOADING GEAR with the Ⓑ hole of the FRONT LOADING SLIDER as shown in Fig. 3-11.

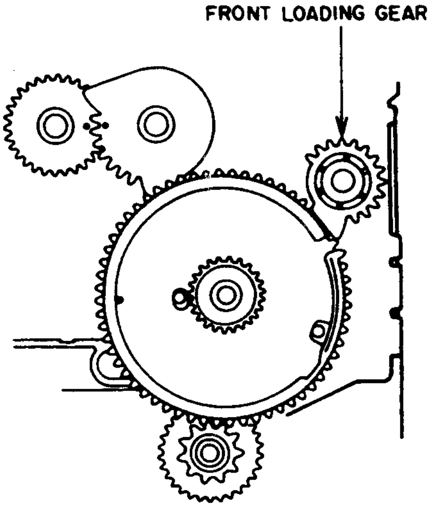

FRONT LOADING GEAR

Fig. 3-10

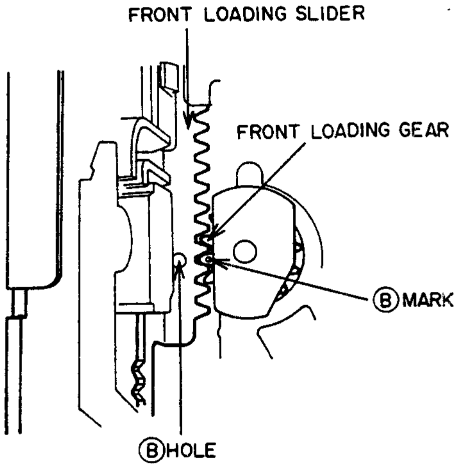

FRONT LOADING SLIDER
FRONT LOADING GEAR
ⒷMARK
ⒷHOLE

Fig. 3-11

3-4-3. Confirmation of the position of the EJECT GEAR

1) Confirm that the EJECT GEAR is in the correct position as shown in Fig. 3-12.

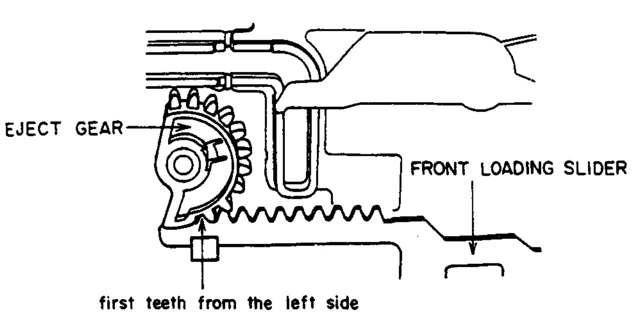

EJECT GEAR
FRONT LOADING SLIDER
first teeth from the left side

Fig. 3-12

2) Install the LOADING DRIVE BLK as shown in Fig. 3-13.

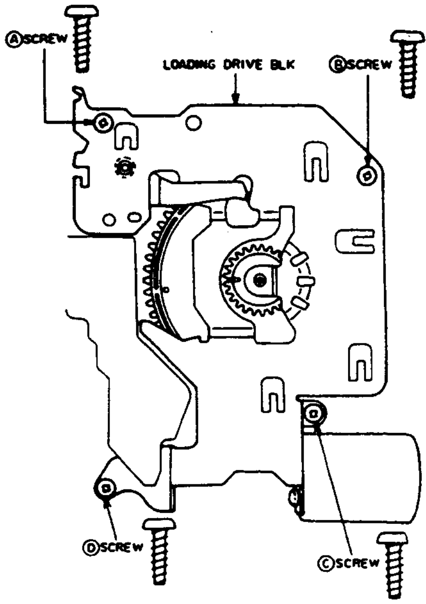

ⒶSCREW
LOADING DRIVE BLK
ⒷSCREW
ⒹSCREW
ⒸSCREW

Fig. 3-13

3-4-4. Installation of the MODE SELECT SWITCH

1) Set the MODE SELECT SWITCH's gear so that the Ⓒ mark is in the center of the Ⓒ hole as shown in Fig. 3-14.

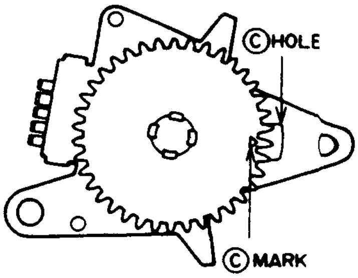


Fig. 3-14

2) Attach the MODE SELECT SWITCH to the LOADING DRIVE BLK. At this time, align the hollow of the gear's tooth (reverse side of the Ⓒ mark) with the Ⓒ groove of the CAM SLIDER GEAR as shown in Fig. 3-15.

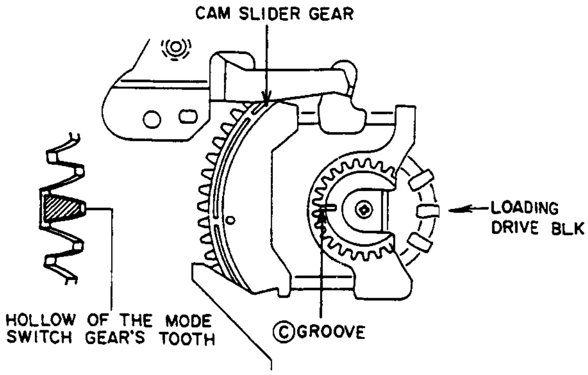

CAM SLIDER GEAR
LOADING DRIVE BLK
HOLLOW OF THE MODE SWITCH GEAR'S TOOTH
ⒸGROOVE

Fig. 3-15

3-4-5. Installation of the LOADING ARM BLK

1) While covering the SENSOR (S) with your fingers, connect the AC power plug to the AC socket. The FRONT LOADING SLIDER will reach the "EJECT" position. Then disconnect the AC power plug from the AC socket before you release your fingers from the SENSOR (S).
2) Install the LOADING ARM BLK in the reverse order of 3-1-2 (Removal of the LOADING ARM BLK). Set the position between both the EJECT GEAR and the JOINT GEAR as shown in Fig. 3-16.

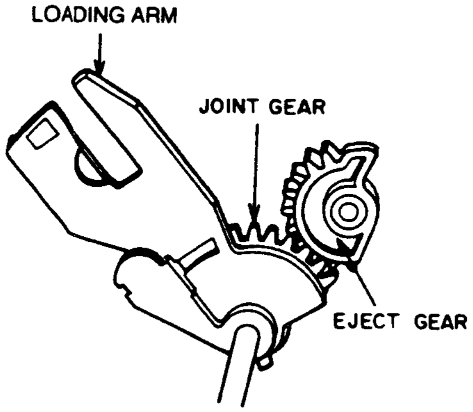


Fig. 3-16

3-4-6. Installation of the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE

1) Attach the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE in the reverse order of 3-1-1 (Removal of the CASSETTE LOAD BLK).
2) Insert a video cassette tape and confirm that the loading mechanism will operate properly.

3-5.REPLACEMENT OF THE PINCH HOLDER PART

1) Remove the grip ring and release the stopper of the PINCH ARM and remove the PINCH ARM BLK as shown in Fig 3-17.

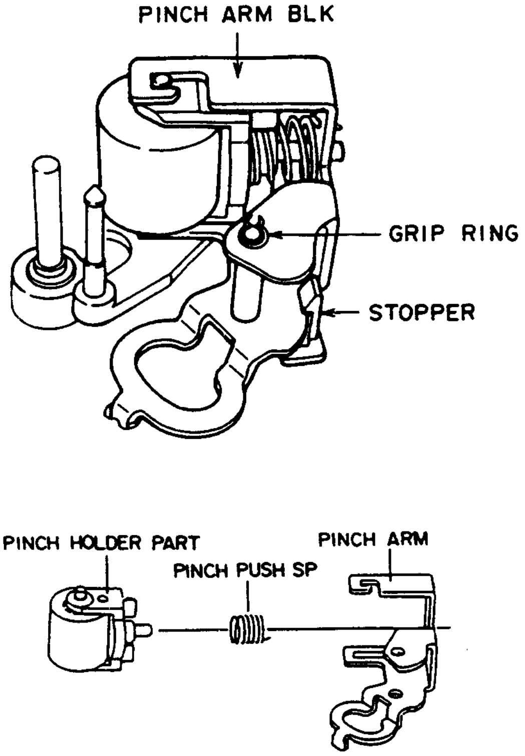


Fig. 3-17

2) Turn the PINCH HOLDER PART 30 degrees clockwise while pushing it backward and remove the PINCH HOLDER PART from the PINCH ARM.
3) Reassemble the PINCH ROLLER ARM BLK in the reverse order of 1) to 2).

3-6.REPLACEMENT OF THE IDLER PART AND REVIEW BRAKE PART

1) Remove the REWIND BRAKE PART, CASSETTE LOAD BLK & ARM LOADING BLK. (Refer to 3-1, REMOVAL OF THE EJECTOR BLK.)
2) Release the stopper of the IDLER PART as shown in Fig. 3-18, then remove it.

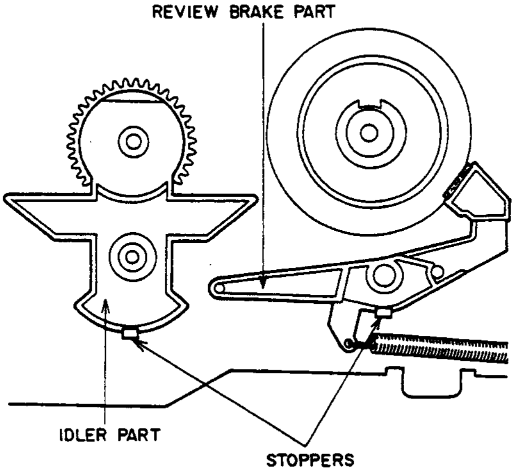


Fig. 3-18

3) Take off the review brake part spring, then release the stopper of the REVIEW BRAKE PART and remove it.
4) Reassemble these parts in the reverse order of 1) to 3).

3-7. REPLACEMENT OF THE UPPER DRUM

3-7-1. Removal of the UPPER DRUM

1) Unsolder the four relay leads and remove the two upper drum fixing screws as shown in Fig. 3-19.
2) Gently lift and remove the UPPER DRUM.

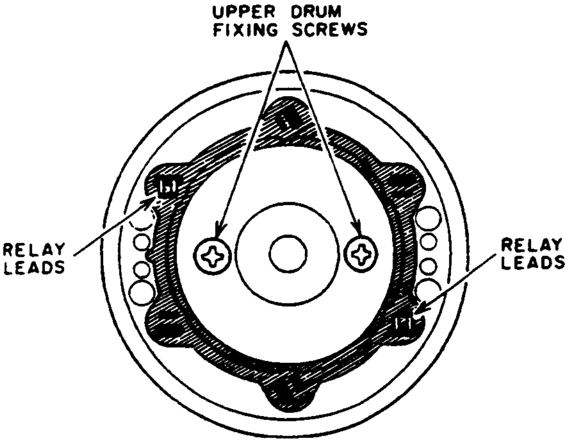


Fig. 3-19

3-7-2. Installation of the UPPER DRUM

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR so that the upper drum convex — and lower drum rotor's white mark are in the same direction as shown in Fig. 3-20.

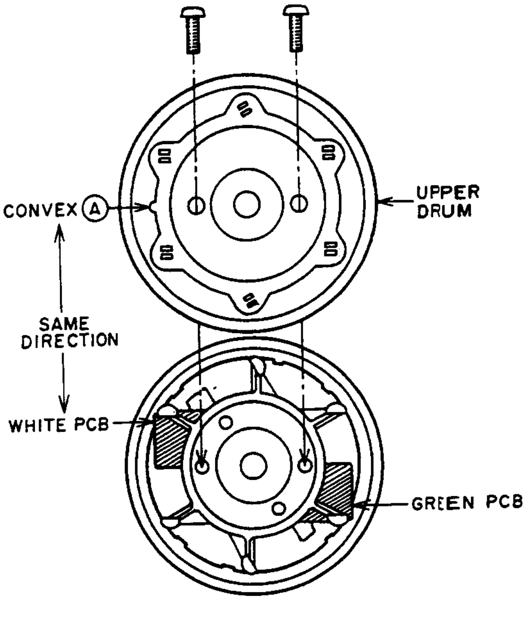


Fig. 3-20

NOTE: Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

a) Do not loosen the set screw on the collar preload.
b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
d) Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
e) Tighten the two upper drum fixing screws alternately and gradually.

3-7-3. After replacement

After replacement, the following adjustments are necessary for the proper performance.

1) Control head Phase adjustment (IV. MECHANICAL ADJUSTMENT 4-3-3.)
2) PB switching point adjustment. (V. ELECTRICAL ADJUSTMENT Step 1)
3) Video head REC current adjustment. (V. ELECTRICAL ADJUSTMENT Step 6)
4) ENV. DET (I-HQ) adjustment. (V. ELECTRICAL ADJUSTMENT Step 10)

3-8.DRUM MOTOR PC BOARD REPLACEMENT

1) Remove the two Ⓐ screws on the ROTARY PLATE and remove the ROTARY PLATE.
Then disconnect the connector on the DRUM MOTOR PCB as shown.

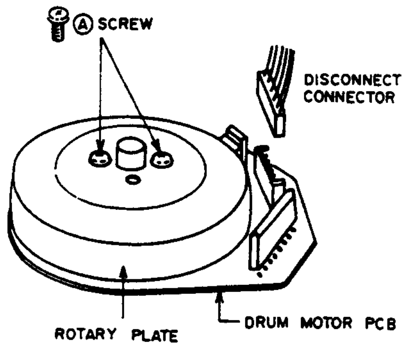

Ⓐ SCREW
DISCONNECT CONNECTOR
ROTARY PLATE
DRUM MOTOR PCB

Fig. 3-21

2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace the DRUM MOTOR PCB.

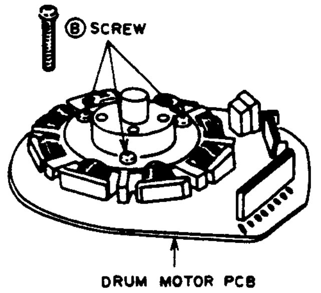

Ⓑ SCREW
DRUM MOTOR PCB

Fig. 3-22

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole are in the same direction.

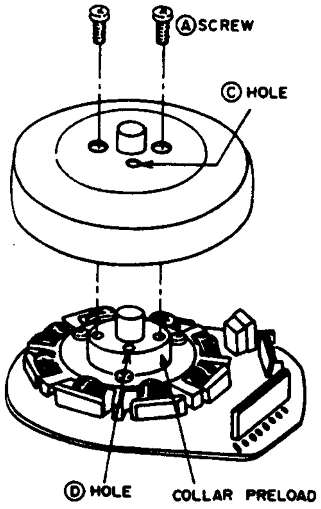

ⒶSCREW
Ⓒ HOLE
Ⓓ HOLE
COLLAR PRELOAD

Fig. 3-23

3-9.REMOVAL OF THE MECHANISM BLOCK

3-9-1. Removal of the PRE AMP PC Board

1) Remove the two Ⓐ screws then pull up the PRE AMP PCB as shown in Fig. 3-24.

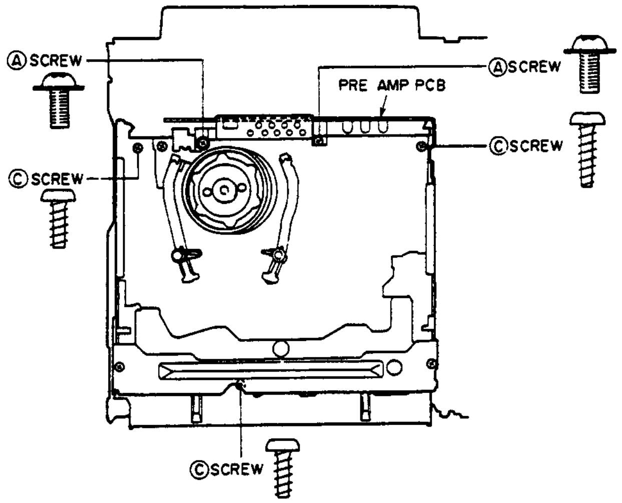

ⒶSCREW
ⒸSCREW
PRE AMP PCB
ⒶSCREW
ⒸSCREW
ⒸSCREW

Fig. 3-24

3-9-2. Removal of the MECHANISM BLK (MECHA. FRAME)

1) Disconnect the connectors P301, P302, P303, on the MAIN (A) PCB and P1 on the A/C HEAD PCB.
2) Remove the three Ⓒ screws from the MECHA. FRAME as shown in Fig. 3-24.
3) Hold the rear side of the MECHA. FRAME then remove by pulling up backward.
4) Reassemble in the reverse order for installation.

IV. MECHANICAL ADJUSTMENT

4-1.BACK TENSION ADJUSTMENT

1) Play back a recorded tape which is no longer needed.
2) Confirm that the Ⓐ groove on the TENSION ARM aligns with right end of the Ⓐ mark on the MECHA. CHASSIS as shown in Fig.4-1.
3) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until the result is satisfactory.

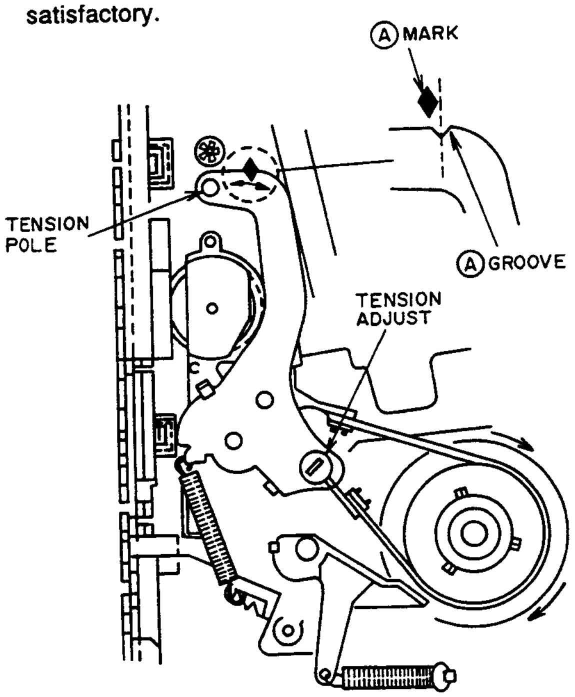


Fig. 4-1

4-2.TAPE TRANSPORT ADJUSTMENTS

NOTE: The following adjustments are required only when an irregularity is found since these adjustment are performed precisely at the factory.

4-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK until the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle.
3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 4-3. A/C HEAD POSITION ADJUSTMENT.)

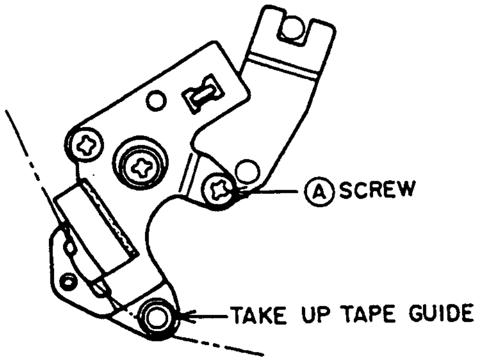


Fig. 4-2

(TAKE-UP TAPE GUIDE)

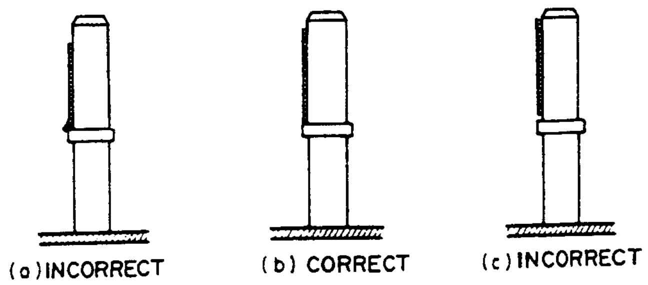


Fig. 4-3

4-2-2. Confirmation of tape curl at the SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE without any curl or wrinkle as shown in Fig.4-4.

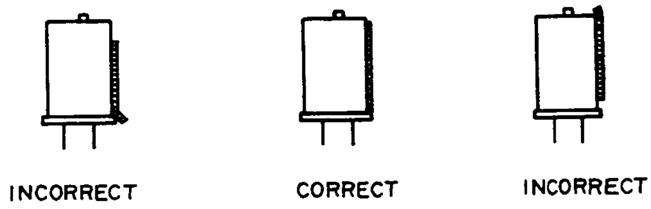


Fig. 4-4

4-2-3. REVIEW ARM height adjustment

1) Play back the beginning part of an E-240 (T-160) tape and set the unit in the REVIEW mode by pressing the REW button.
(Remove the tape protection cover to make the adjustment easy.)

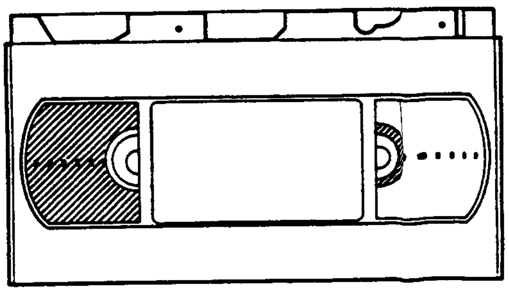


Fig. 4-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig.4-6 to Fig.4-8.

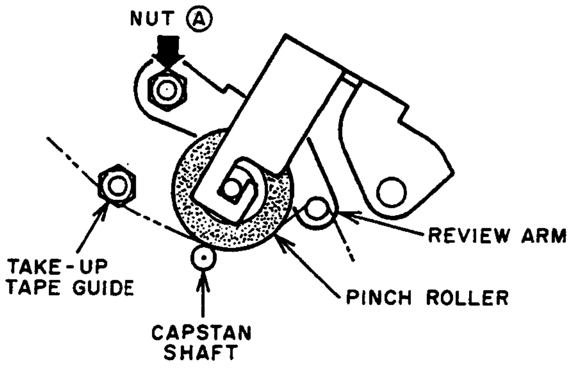
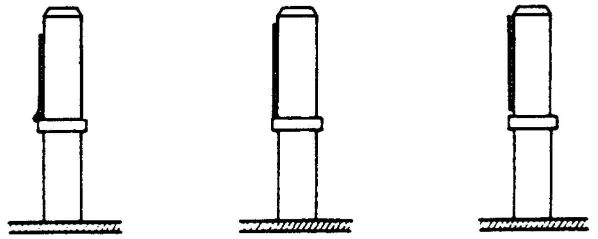


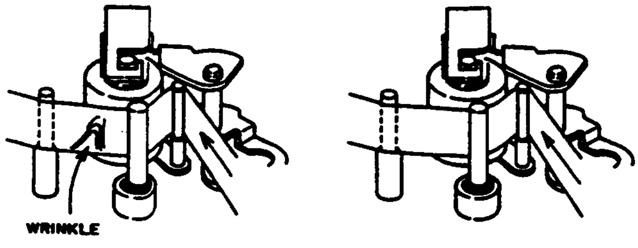
Fig. 4-6

(TAKE-UP TAPE GUIDE)



(a)INCORRECT (b) CORRECT (c)INCORRECT

Fig. 4-7

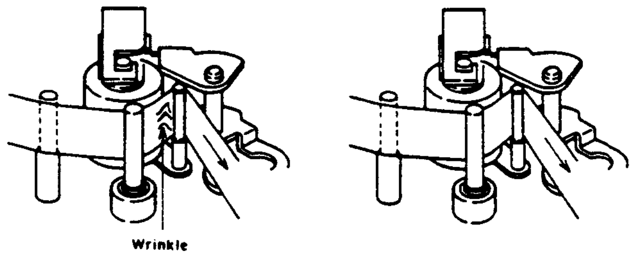


INCORRECT CORRECT

Fig. 4-8

3) Play back the beginning part of an E-240 (T-160) tape and this time set the unit in the QUE mode by pressing the F.FWD button.

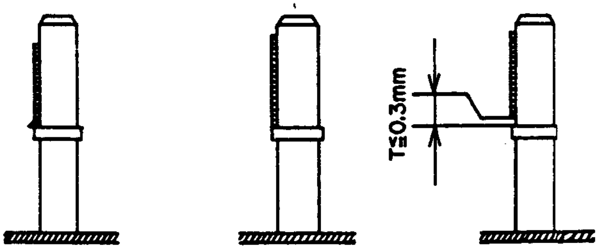
4) Confirm there is no curl or wrinkle at REVIEW ARM's guide.
If curl or wrinkle of the tape has occurred, slightly turn the Ⓐ nut (Shown in Fig.4-6) until it disappears.



INCORRECT CORRECT

Fig. 4-9

5) Set the unit in REVIEW mode again. Then confirm that there is no curl or wrinkle at the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable)



(a) INCORRECT (b) CORRECT (c) CORRECT

Fig. 4-10

NOTE:

1. If results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-240 (T-160) tape can easily be damaged due of its thinness, a pre-adjustment with an E-180 (T-120) tape is recommended.

4-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer Fig.4-11.)

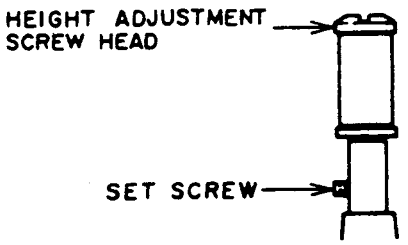

HEIGHT ADJUSTMENT SCREW HEAD
SET SCREW

Fig. 4-11

2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope's CH-1 to the TR510 emitter (ENVE) on the MAIN PCB and CH-2 to the TP1 (VSWP) on the PRE AMP PCB for triggering.
4) Turn the LOADING LEADER heads with a flat head (—) screwdriver to obtain flat RF envelope as ideal envelope as shown in Fig.4-12.
5) After adjustment is completed, tighten the loading leader set screws.

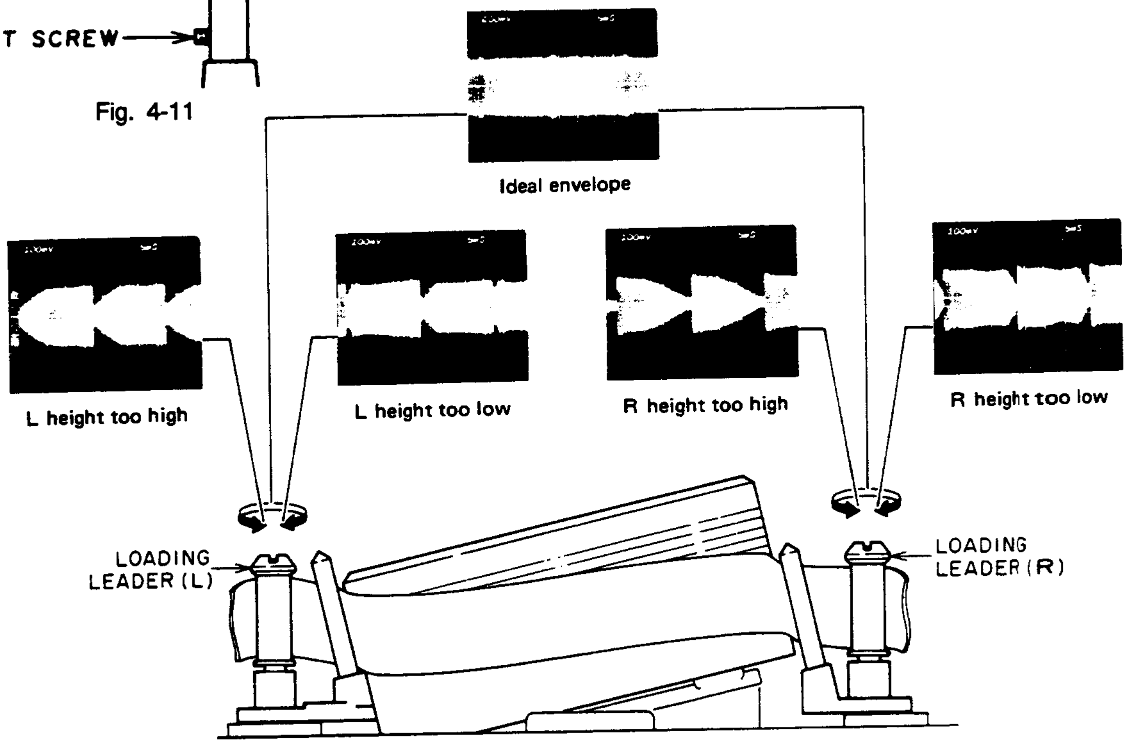

Ideal envelope
L height too high
L height too low
R height too high
R height too low
LOADING LEADER (L)
LOADING LEADER (R)

Fig. 4-12

4-3.A/C HEAD POSITION ADJUSTMENT

4-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Adjust the Ⓑ screw to obtain the maximum audio output.

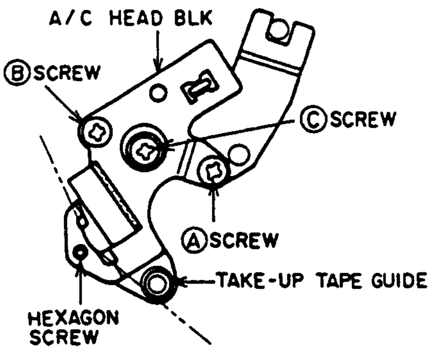
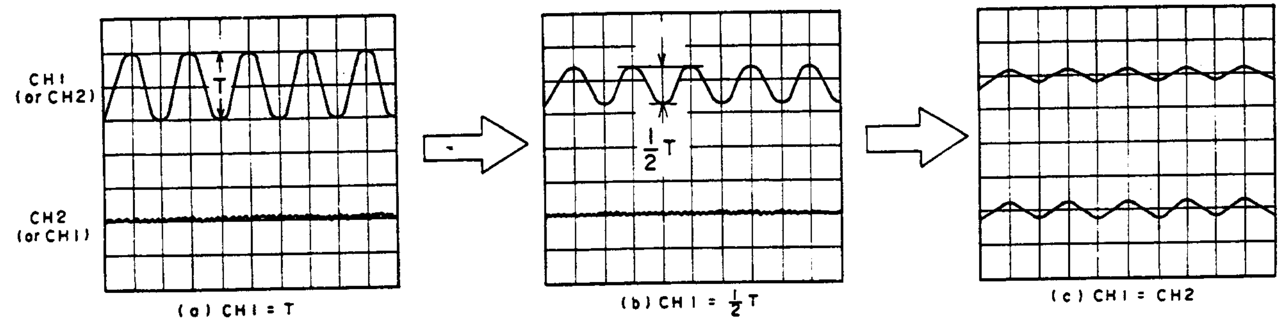

A/C HEAD BLK
ⒷSCREW
ⒸSCREW
ⒶSCREW
TAKE-UP TAPE GUIDE
HEXAGON SCREW

Fig.4-13

4-3-2. Height adjustment

1) Play back the test tape TF-526HH (AT-751788).
2) Connect an oscilloscope's CH-1 to the AUDIO OUT on the rear panel and CH-2 to the TP301 (CTL OUT) on the MAIN (A) PCB.
3) Turn the hexagon screw to obtain 1/2 of the output level of either CH-1 or CH-2 whichever has an output signal as shown in Fig.4-14.
   Then set both of the oscilloscope's channels to 100mV/div and finely adjust the hexagon screw until both signals of CH-1 and CH-2 are nearly the same level.
4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig.4-3.
5) Adjust the head azimuth again. (Turning the hexagon screw or Ⓐ screw will cause head azimuth mis-alignment. Refer to 4-3-1. Azimuth adjustment.)
6) Confirm that both signals of CH-1 and CH-2 are nearly the same level (Confirm that neither of the CH-1 or CH-2 output level exceed 100mVp-p). If the result is not satisfactory,repeat steps 3) to 5).


CH1
(or CH2)
T
CH2
(or CH1)
$\frac{1}{2}$T

(a) CH1 = T (b) CH1 = $\frac{1}{2}$T (c) CH1 = CH2

Fig. 4-14

4-3-3. phase adjustment

1) Connect an oscilloscope's CH-1 to the TR510 emitter (ENVE) on the MAIN PCB and CH-2 to the TP1 (VSWP) on the PRE AMP PCB for triggering.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Press one of the TRACKING buttons on the remote control until the "x" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig.4-15.

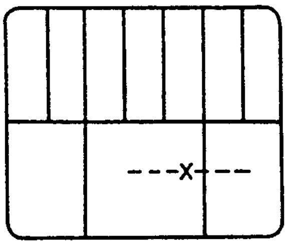


Fig. 4-15

4) Loosen the © screw slightly so that the A/C HEAD PLATE can be moved with reasonable tightness.
5) Insert a sharp flat head (—) screwdriver into the A/C HEAD BASE and Ⓐ hole as shown in Fig.4-17.
6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig.4-17 to obtain the maximum RF output, then tighten the © screw.

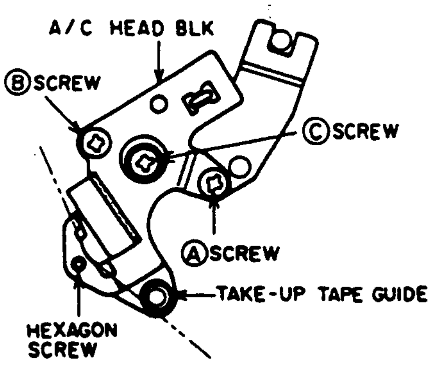

A/C HEAD BLK
ⒷSCREW
©SCREW
ⒶSCREW
TAKE-UP TAPE GUIDE
HEXAGON SCREW

Fig. 4-16

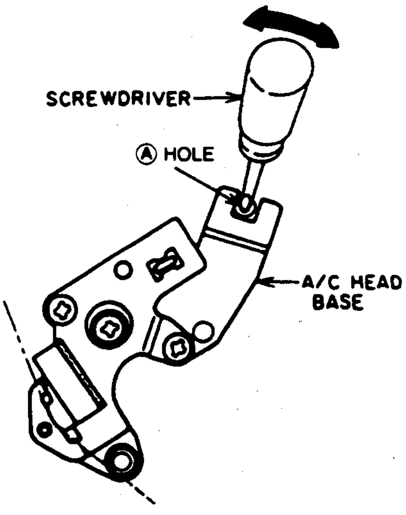

SCREWDRIVER
Ⓐ HOLE
A/C HEAD BASE

Fig. 4-17

IX. HOW TO ASSEMBLE LOADING MECHANISM

1) With the unit unloaded, attach Gear Loading (S) BLK and Gear Loading (T) BLK to Mecha chassis so that align the mark.

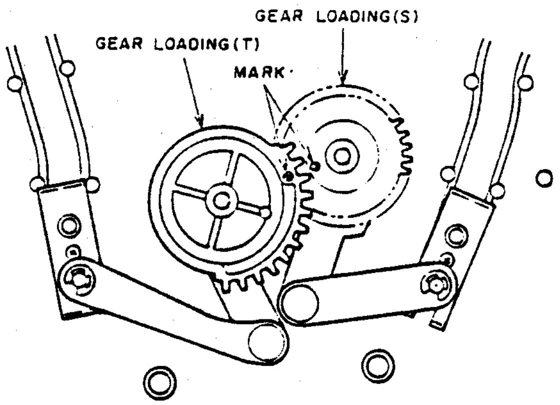

GEAR LOADING(S)
GEAR LOADING(T)
MARK

Fig. 9-1

2) Attach Gear Cam Eject to Mecha chassis so that Pin Ⓐ of Lever Eject Cam mates oval hole of Gear Cam Eject.

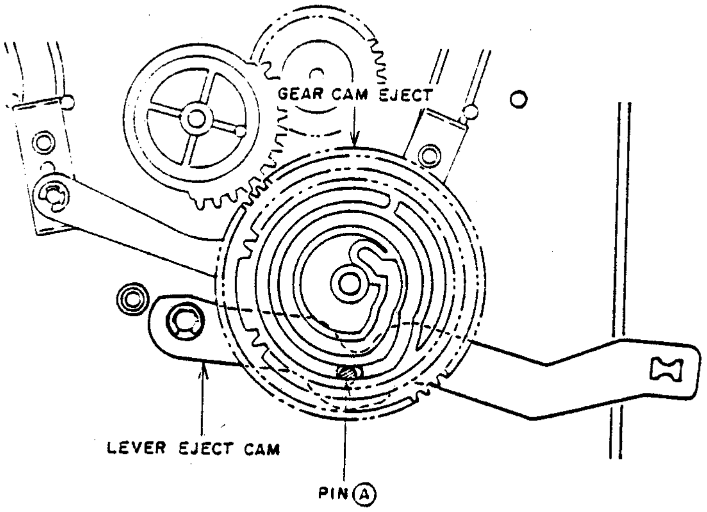

GEAR CAM EJECT
LEVER EJECT CAM
PIN Ⓐ

Fig. 9-2

3) Attach Gear Cam Main to Mecha chassis so that Pin Ⓐ of Lever P Cam and Pin Ⓑ of Lever Cam Slide mate oval hole of Gear Cam Main.

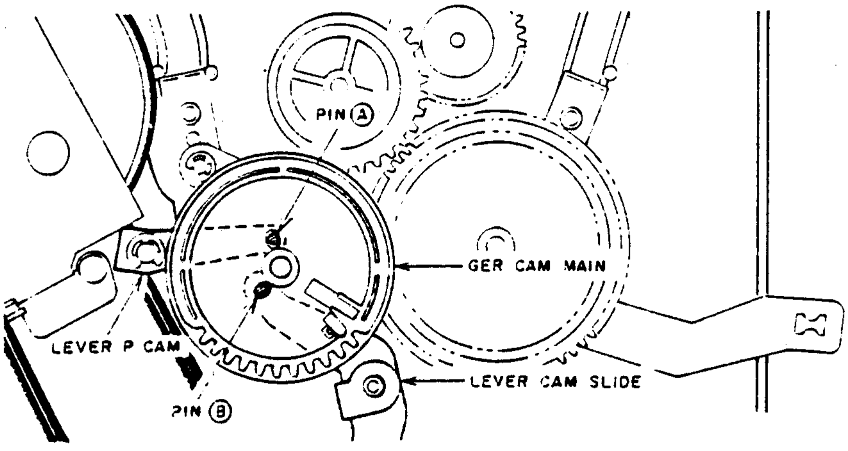

PIN Ⓐ
GER CAM MAIN
LEVER P CAM
LEVER CAM SLIDE
PIN Ⓑ

Fig. 9-3

4) Attach Lever Cam Tension to Mecha chassis so that Pin Ⓐ goes into valley of Gear Cam Eject.
5) Attach Lever Cam Free to Mecha chassis so that Pin Ⓑ goes into valley of Gear Cam Eject.

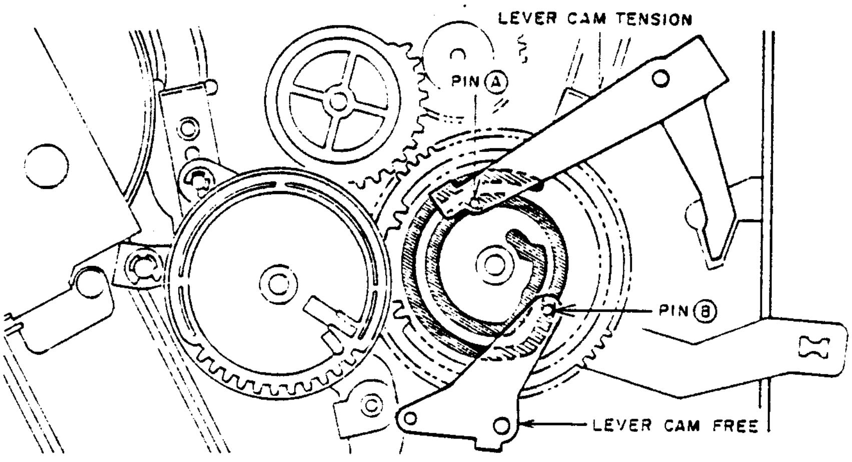

LEVER CAM TENSION
PIN Ⓐ
PIN Ⓑ
LEVER CAM FREE

Fig. 9-4

6) Attach Arm Set Free onto Lever Cam Slide.
7) Attach Spring Torsion Gear Loading.

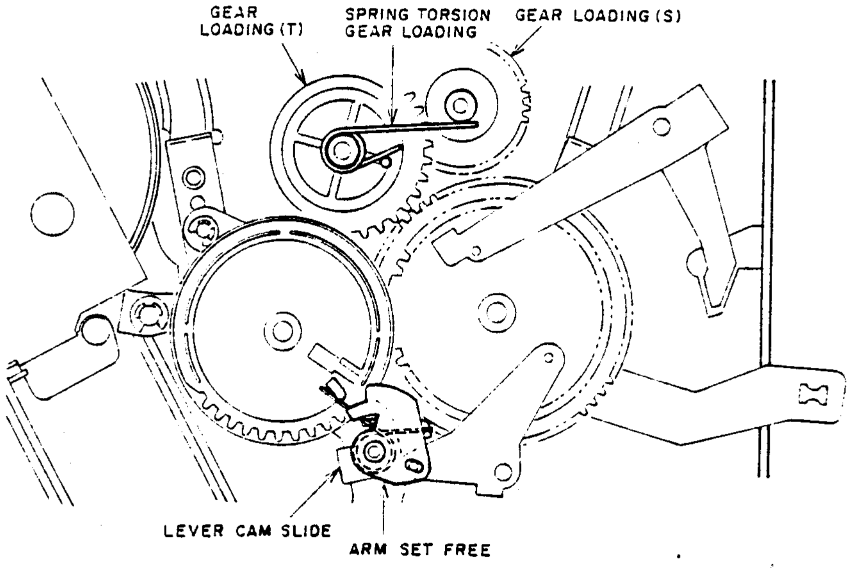
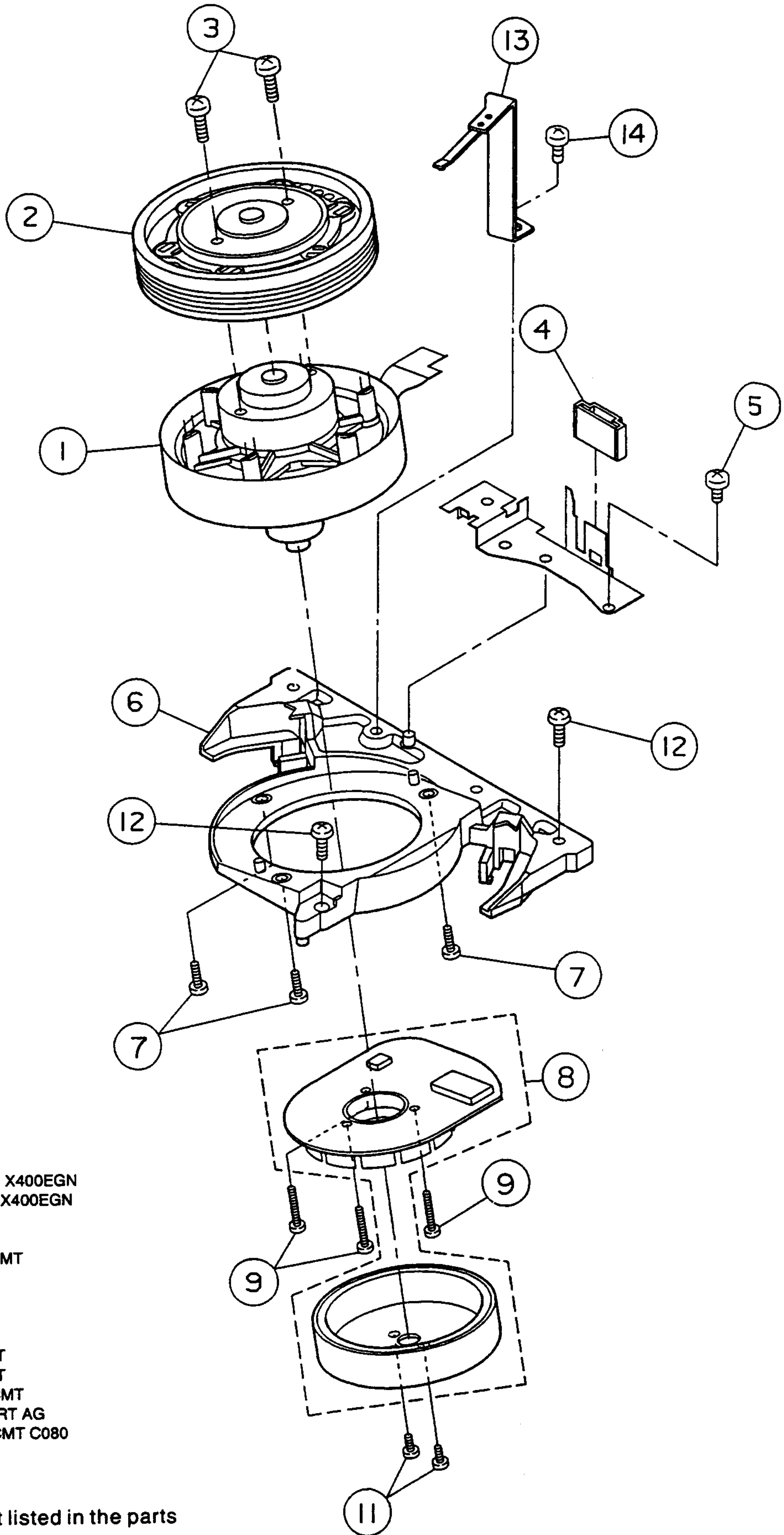

GEAR LOADING (T)
SPRING TORSION GEAR LOADING
GEAR LOADING (S)
LEVER CAM SLIDE
ARM SET FREE

Fig. 9-5

Ref.No.	Part No.	Description
113	EO-388362J	COIL OSC 1 V1102
114	ER-331188	R FUSE H S10 ERD2FC 1/4W 8R2J
115	*ER-404092J	R FUSE H S10 RF25S 1/4W R56J
116	*ER-400959J	R FUSE V T05 ERD2FCV 1/4W1200G
117	*ER-400605J	R FUSE V T05 ERD2FCV 1/4W15R0G
118	*ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
119	*ER-400729J	R FUSE V T05 RF25SCVTP1/4WR47K
120	*ER-404093J	R FUSE V T05 RF25SCVTP1/4WR56K [EO/EOG/EOH]
121	ER-403405J	R OMF H S12 FS 1W R75J
122	ES-373099	SW LEAF MTS10110MPC1
123	ES-387465J	SW MODE SELECT MMS00070ZLBO [SW1]
124	ES-403973J	SW TACT EVQ-QEK06K [EA,RESET]
125	ES-403249J	SW TACT EVQ-QKK08Q [EXCEPT EA,RESET]
126	ES-349474	SW TACT SKHHAM004A [POWER]
127	ET-381637J2	DETECTOR GP1U521X
128	ET-724885J	TR CHIP RT1N141C [EOG]
129	ET-713614	TR CHIP 2SA1235 E,F
130	ET-725820J	TR CHIP 2SC2735J
131	ET-370819	TR CHIP 2SC3052
132	ET-356336	TR DTA114ES
133	ET-363953	TR DTA114TS [ES]
134	ET-360646	TR DTA143ES [ES]
135	ET-354415	TR DTA144ES
136	ET-373985	TR DTA144TS
137	ET-353897	TR DTC114ES
138	ET-360399	TR DTC114TS
139	ET-354364	TR DTC143TS
140	ET-354414	TR DTC144ES
141	ET-361490	TR PHOTO PN268 [TR1]
142	ET-390010J	TR PHOTO PT4800 [TR2]
143	ET-390009J	TR PHOTO PT493F [TR4]
144	ET-364040	TR UN421D
145	ET-353899	TR 2SA1317 S,T,U
146	*ET-366365	TR 2SB1185 E,F
147	ET-388338J	TR 2SB1425 S,E
148	ET-375777	TR 2SC2926S P,Q
149	ET-397160J	TR 2SC3330 R,S,T,U,V
150	ET-354083	TR 2SD1189 Q,R
151	ET-366168	TR 2SD1292 Q,R [EOG]
152	*ET-380685J	TR 2SD1761 E,F,G
153	*ET-381175J	TR 2SD1856
154	ET-405622J	TR 2SD2061 E,F [EO/EOG/EOH]
155	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
156	HE-390013J	HEAD E HVFME0020A
157	HR-405340J	HEAD COMBO HVMZA1121A
158	MB-387289J	BELT CAPSTAN
159	MI-387294J	IDLLER PART
160	ML-391745J2	ARM DAMPER
161	ML-387350J1	ARM LID OPENER
162	ML-387423J	ARM LOADING BRAKE
163	ML-387277J3	ARM REVIEW PART
164	ML-387402J1	LEVER TRIGGER
165	ML-387316J	MAIN BRAKE (S) PART
166	ML-387318J	MAIN BRAKE (T) PART
167	ML-387321J	REVIEW BRAKE PART
168	ML-387324J	SLIDER BRAKE PART
169	ML-404944J	SLIDER TRIGGER (2)
170	MR-404544J	HOLDER THRUST WORM (2)
171	MR-391968J	PULLEY TRIGGER (2)
172	MR-387286J1	ROLLER IMPEDANCE
173	MT-390954J1	DISK (2) PART
174	MZ-387298J3	DISK CLUTCH PART
175	MZ-387331J	GEAR CAM SLIDER
176	MZ-387335J	GEAR EJECT
177	MZ-387333J	GEAR FRONT LOADING
178	MZ-V1102A090A	GEAR TOGGLE (S) BLK 425EA
179	MZ-V1102A100A	GEAR TOGGLE (T) BLK 425EA
180	MZ-387332J	GEAR WORM WHEEL
181	MZ-404539J	REW BRAKE PART

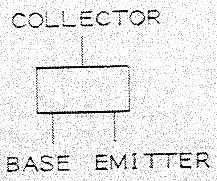
HEAD DRUM BLOCK



2. HEAD DRUM BLOCK

Ref.No.	Part No.	Description
1	BV-V1123A410A	LOWER DRUM BLK X400EGN
2	BV-V1123A420A	UPPER DRUM BLK X400EGN
3	ZS-321298	BID30X08STL CMT
4	SZ-387388J	HOLDER FPC
5	ZS-358936	ST BID30X06STL CMT
6	MA-387474J2	BASE DRUM
7	ZS-563444	BID26X08STL CMT
8	BM-401296J	MOTOR E20EL89 [DRUM MOTOR]
9	ZS-467796	PAN26X12STL CMT
11	ZS-379350	PAN30X06STL CMT
12	ZS-336714	ST BID30X12STL CMT
13	VT-401282J	EARTH BRUSH PART AG
14	ZS-389853J	DT BID30X06STL CMT C080

NOTE:
arts will not be supplied if they are not listed in the parts .st, even if they appear on the assembling illustrations with reference No.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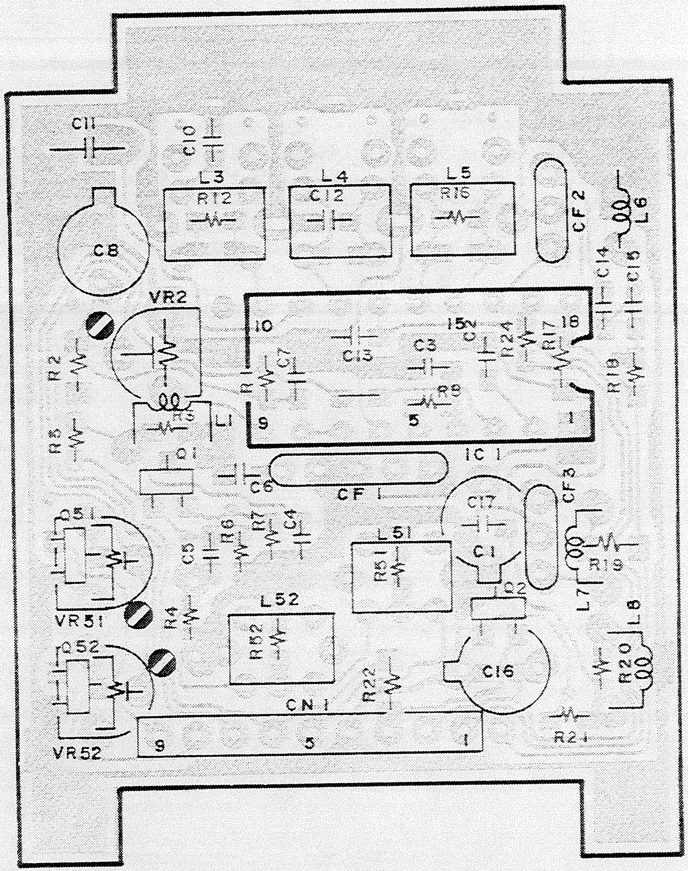
BASE
EMITTER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C14
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C2
R24
R17
18
C13
C3
C7
R1
R9
R2
R18
R3
L1
9
5
1
IC1
Q1
C6
CF1
C17
CF3
Q51
R6
R7
C4
L51
C5
R51
C1
R19
VR51
R4
L52
Q2
L7
L8
Q52
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CN1
VR52
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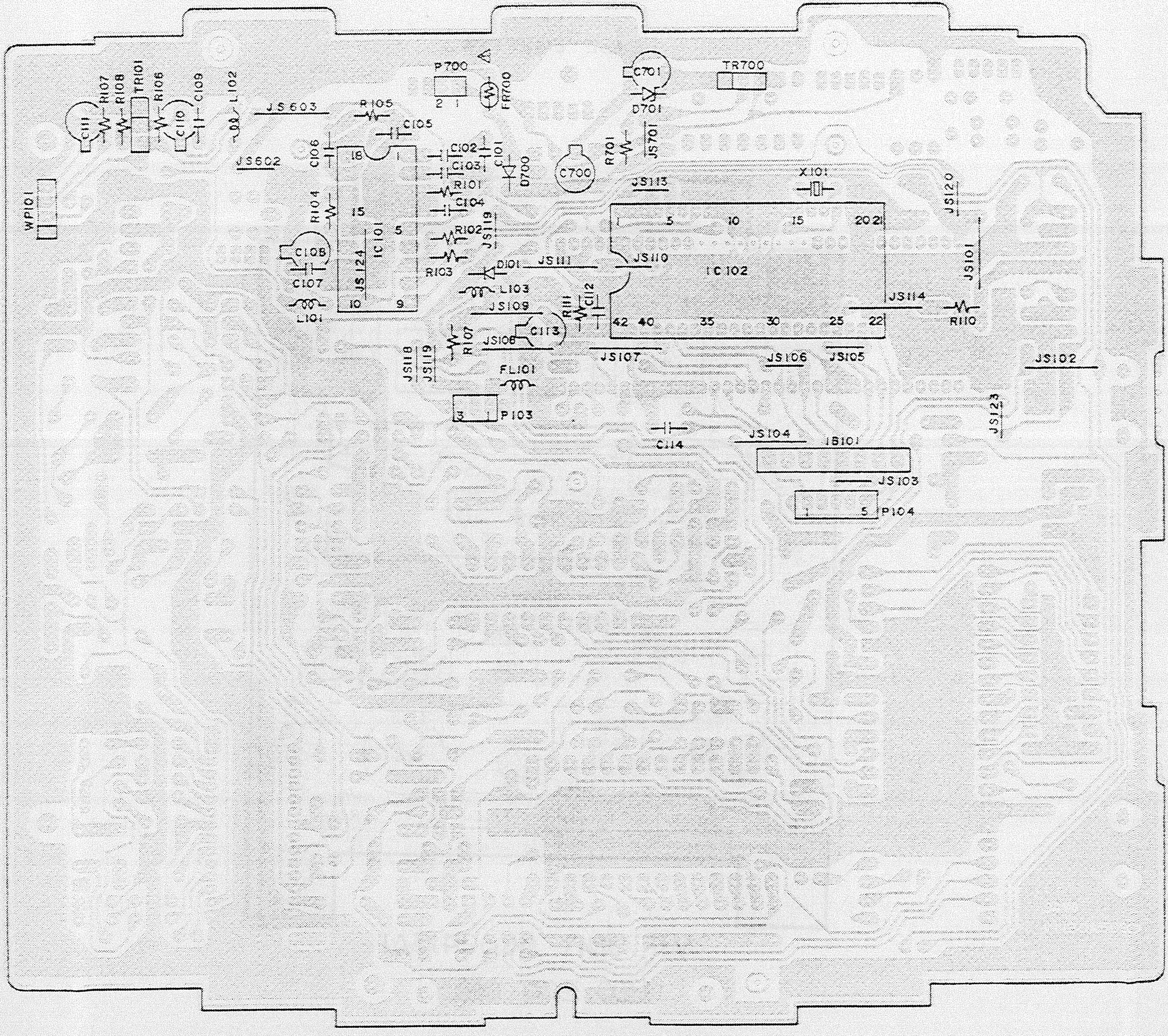
1
R21

VIF UNIT 6C02413A1
(EO.EOG ONLY)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D701
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R108
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C110
C109
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JS602
C106
C102
C103
C101
R101
C104
R102
R103
D700
C700
R701
JS701
JS113
X101
JS120
WP101
R104
C108
C107
IC101
JS124
JS119
L101
D101
JS111
JS110
IC102
L103
JS109
R111
C112
C113
JS108
R107
JS118
JS119
JS107
JS106
JS105
JS114
R110
JS101
JS102
FL101
P103
C114
JS104
IB101
JS123
JS103
P104

VPS PCB V1130A5090

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

5. P.C BOARD BLOCK

Ref.No.	Part No.	Description
1A	BA-V1130A600A	PC (#) MAIN (PAL) BLK F220EA [EA]
1B	BA-V1130Q600E	FRPC (#) MAIN (PAL) BLKF200EO/FR [EO]
1C	BA-V1130A600B	PC (#) MAIN (PAL) BLK F220EDG [EDG]
1D	BA-V1130A600F	PC (#) MAIN (PAL) BLK F200EOG [EOG]
1E	BA-V1130A600G	PC (#) MAIN (PAL) BLK F200EOH [F190EOH]
1F	BA-V1130A600J	PC (#) MAIN (PAL) BLK F220EOH [F220/F230EOH]
1G	BA-V1130A600H	PC (#) MAIN (PAL) BLK F240ES [ES]
2A	BA-V1130A610A	PC PRE AMP BLK F220EA [EA]
2B	BA-V1130A610C	PC PRE AMP BLK F220EDG [EO/EDG/EOG/EOH]
2C	BA-V1130A610D	PC PRE AMP BLK F240ES [ES]
3A	BA-V1130A630L	PC OPERATION (A) BLK F222EA [EA]
3B	BA-V1130Q630E	FR PC OPERATION (A) BLK F200EO/FR [EO]
3C	BA-V1130A630B	PC OPERATION (A) BLK F220EDG [EDG]
3D	BA-V1130Q630J	FR PC OPERATION (A) BLK F200EOG/FR [EOG]
3E	BA-V1130A630F	PC OPERATION (A) BLK F200EOH [F190EOH]
3F	BA-V1130A630M	PC OPERATION (A) BLK F220EOH [F220/F230EOH]
3G	BA-V1130A630K	PC OPERATION (A) BLK F240ES [ES]
4A	BA-V1130A500A	PC POWER BLK F220EA [EA/EDG/ES]
4B	BA-V1130A500F	PC POWER BLK F200EO [EO]
4C	BA-V1130A500D	PC POWER BLK F200EOG [EOG]
4D	BA-V1130A500E	PC POWER BLK F200EOH [EOH]

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.
- MAIN (A) P.C BOARD
- MAIN (B) P.C BOARD
- VIF UNIT

6. MAIN (A) P.C BOARD

Ref.No.	Part No.	Description
C369	*EC-391843J	C DOUBLE FYDOH 223Z 5.5DC
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131 [EOH]
D6	ED-403731J	D ZENER H UTZJ8.2C [EOH]
D7	ED-307572	D SILICON H 1SS131 [EOH]
D8	ED-403732J	D ZENER H UTZJ5.6A
D9	ED-307572	D SILICON H 1SS131 [EO/EOG]
D10	ED-307572	D SILICON H 1SS131 [EO/EOG]
D12	ED-405603J	D ZENER H MTZJ10B T26 [EO/EOG/EOH]
D13	ED-405604J	D ZENER H MTZJ4.3C T26 [EO/EOG/EOH]
D201	ED-307572	D SILICON H 1SS131
D202	ED-307572	D SILICON H 1SS131
D203	ED-307572	D SILICON H 1SS131
D204	ED-403728J	D ZENER H UTZJ5.1C
D205	ED-403267J	D ZENER H MTZJ3.3B T26
D206	ED-307572	D SILICON H 1SS131 [EOG]
D207	ED-307572	D SILICON H 1SS131 [EOG]
D208	ED-307572	D SILICON H 1SS131
D209	ED-307572	D SILICON H 1SS131
D210	ED-403726J	D ZENER H UTZJ30B [EOG]
D211	ED-403730J	D ZENER H UTZJ6.2A [EOG]
D212	ED-511907	D SILICON 1N4002 100/1.0A
D213	ED-511907	D SILICON 1N4002 100/1.0A
D301	ED-307572	D SILICON H 1SS131
D302	ED-307572	D SILICON H 1SS131
D303	ED-404086J	D ZENER H UTZJ7.5C
D304	ED-403724J	D ZENER H UTZJ10A
D305	ED-307572	D SILICON H 1SS131
D306	ED-307572	D SILICON H 1SS131
D307	ED-307572	D SILICON H 1SS131
D308	ED-307572	D SILICON H 1SS131
D309	ED-307572	D SILICON H 1SS131
D401	ED-307572	D SILICON H 1SS131
D402	ED-307572	D SILICON H 1SS131
D403	ED-307572	D SILICON H 1SS131 [ES]
D405	ED-307572	D SILICON H 1SS131
D406	ED-366443	D SILICON H MA700FA5 F10
D501	ED-307572	D SILICON H 1SS131 [EXCEPT EA/ES]
D502	ED-307572	D SILICON H 1SS131
D503	ED-307572	D SILICON H 1SS131
D505	ED-307572	D SILICON H 1SS131
D506	ED-307572	D SILICON H 1SS131
D507	ED-307572	D SILICON H 1SS131
D508	ED-307572	D SILICON H 1SS131 [EXCEPT EA/ES]
DL500	EH-390730J	DL EFD-JF124A13J
DL501	EH-394838J	DL ADL-FN1344Q [ES]
FR201	*ER-400959J	R FUSE V T05 ERD2FCV 1/4W1200G
FR202	*ER-404093J	R FUSE V T05 RF25SCVTP1/4WR56K [EO/EOG/EOH]
FR350	*ER-400729J	R FUSE V T05 RF25SCVTP1/4WR47K
FR501	*ER-404092J	R FUSE H S10 RF25S 1/4W R56J
IC1	EI-389622J	IC L5631
IC101	EI-403231J	IC CD4066BE
IC201	EI-400756J	IC NJM4558L-B
IC301	EI-405246J	IC MN675121 KBXSYP3 XAV2
IC302	EI-353421	IC BA6229
IC303	EI-373980	IC BA15218N
IC400	EI-403234J	IC LA7391
IC401	EI-394856J	IC LC8992
IC402	EI-373981J1	IC BA10393N
IC403	EI-356457	IC BU4013B [ES]
L1	EO-373260	COIL FIX 1 LAP02 F05 1R0K [EA]
L101	EO-345881	COIL FIX 1 EL0606SKI 100J
L301	EO-381196J	COIL FIX 1 EL0405SKI 470K
L302	EO-345881	COIL FIX 1 EL0606SKI 100J
L401	EO-354600	COIL FIX 1 LAP02 F05 100K
L402	EO-357508	COIL FIX 1 LAP02 F05 150K
L403	EO-381192J	COIL FIX 1 EL0405SKI 270K
L404	EO-345880	COIL FIX 1 EL0606SKI 820J
L405	EO-354600	COIL FIX 1 LAP02 F05 100K
L470	EO-356722	COIL FIX 1 LAP02 F05 6R8K
L472	EO-345880	COIL FIX 1 EL0606SKI 820J
L474	EO-388161J	COIL FIX 1 EL0405SKI 560K
L480	EO-403937J	COIL FIX 1 EL0405RA TO 4R7J [EOG]
L500	EO-345880	COIL FIX 1 EL0606SKI 820J
L501	EO-353900	COIL FIX 1 LAP02 F05 150K
L502	EO-345880	COIL FIX 1 EL0606SKI 820J [ES]
L503	EO-353900	COIL FIX 1 LAP02 F05 150K [ES]
L504	EO-353900	COIL FIX 1 LAP02 F05 150K [ES]
L505	EO-345880	COIL FIX 1 EL0606SKI 820J
L506	EO-345880	COIL FIX 1 EL0606SKI 820J
L507	EO-392817J	COIL FIX 1 EL0405SKI 1R2K
L508	EO-403937J	COIL FIX 1 EL0405RA TO 4R7J

Ref.No.	Part No.	Description
L509	EO-345880	COIL FIX 1 EL0606SKI 820J
L510	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L511	EO-381195J	COIL FIX 1 EL0405SKI 331K
L512	EO-381197J	COIL FIX 1 EL0405SKI 471K
L570	EO-345880	COIL FIX 1 EL0606SKI 820J
MD1A	BV-387610J	RF CONVERTER YAA21-0453 EA [EA]
MD1B	BV-403408J	RF CONVERTER MDLK6E753A EDG [EDG]
MD1C	BV-403409J	RF CONVERTER MDLK6D755A EO [EO/EOG/EOH]
MD1D	BV-403411J	RF CONVERTER MDLK6B734A ES [ES]
J101	EJ-387614J	PIN J T6353-ABCB YL BK 4P [EA/EDG/ES]
J102	EJ-387613J	SOCKET M1812 21P [EO/EOG/EOH]
R214	ER-403405J	R OMF H S12 FS 1W R75J
TR1	ET-353899	TR 2SA1317 S,T,U
TR2	ET-375777	TR 2SC2926S P,Q
TR3	ET-353899	TR 2SA1317 S,T,U
TR4	ET-353899	TR 2SA1317 S,T,U
TR5	ET-353899	TR 2SA1317 S,T,U
TR6	ET-353899	TR 2SA1317 S,T,U [EOH]
TR7	ET-353899	TR 2SA1317 S,T,U
TR8	ET-354414	TR DTC144ES
TR9	ET-354414	TR DTC144ES
TR10	ET-354414	TR DTC144ES [EOH]
TR11	ET-353899	TR 2SA1317 S,T,U
TR12	ET-397160J	TR 2SC3330 R,S,T,U,V
TR13	ET-353899	TR 2SA1317 S,T,U [EXCEPT EOH]
TR14	ET-397160J	TR 2SC3330 R,S,T,U,V [EOH]
TR15	ET-353897	TR DTC114ES
TR16	ET-397160J	TR 2SC3330 R,S,T,U,V [EOH]
TR17	ET-397160J	TR 2SC3330 R,S,T,U,V
TR18	ET-397160J	TR 2SC3330 R,S,T,U,V
TR19	ET-354414	TR DTC144ES [EXCEPT EDG/ES]
TR20	ET-405622J	TR 2SD2061 E,F [EO/EOG/EOH]
TR101	ET-354414	TR DTC144ES
TR102	ET-356336	TR DTA114ES
TR103	ET-354414	TR DTC144ES
TR104	ET-353899	TR 2SA1317 S,T,U
TR105	ET-353899	TR 2SA1317 S,T,U
TR107	ET-397160J	TR 2SC3330 R,S,T,U,V
TR108	ET-356336	TR DTA114ES [EO/EOG/EOH]
TR109	ET-397160J	TR 2SC3330 R,S,T,U,V
TR201	ET-366168	TR 2SD1292 Q,R [EOG]
TR202	ET-356336	TR DTA114ES
TR203	ET-397160J	TR 2SC3330 R,S,T,U,V
TR205	ET-388338J	TR 2SB1425 S,E
TR209	ET-354414	TR DTC144ES [EOG]
TR210	ET-405622J	TR 2SD2061 E,F
TR211	ET-356336	TR DTA114ES [EOG]
TR301	ET-354414	TR DTC144ES
TR302	ET-397160J	TR 2SC3330 R,S,T,U,V
TR303	ET-363953	TR DTA114TS [ES]
TR304	ET-354415	TR DTA144ES
TR306	ET-354414	TR DTC144ES
TR307	ET-373985	TR DTA144TS
TR308	ET-373985	TR DTA144TS
TR309	ET-373985	TR DTA144TS
TR310	ET-354414	TR DTC144ES
TR312	ET-354415	TR DTA144ES
TR401	ET-356336	TR DTA114ES
TR404	ET-354364	TR DTC143TS
TR406	ET-353899	TR 2SA1317 S,T,U
TR407	ET-353899	TR 2SA1317 S,T,U
TR408	ET-354414	TR DTC144ES
TR409	ET-360399	TR DTC114TS
TR410	ET-354414	TR DTC144ES

Ref.No.	Part No.	Description
TR414	ET-388338J	TR 2SB1425 S,E
TR415	ET-353899	TR 2SA1317 S,T,U
TR417	ET-360399	TR DTC114TS
TR421	ET-364040	TR UN421D
TR423	ET-356336	TR DTA114ES
TR425	ET-354414	TR DTC144ES [ES]
TR470	ET-353899	TR 2SA1317 S,T,U
TR471	ET-353899	TR 2SA1317 S,T,U
TR501	ET-353897	TR DTC114ES
TR502	ET-360646	TR DTA143ES [ES]
TR503	ET-397160J	TR 2SC3330 R,S,T,U,V
TR504	ET-397160J	TR 2SC3330 R,S,T,U,V [ES]
TR505	ET-397160J	TR 2SC3330 R,S,T,U,V [ES]
TR506	ET-397160J	TR 2SC3330 R,S,T,U,V
TR507	ET-397160J	TR 2SC3330 R,S,T,U,V
TR508	ET-356336	TR DTA114ES
TR509	ET-397160J	TR 2SC3330 R,S,T,U,V
TR510	ET-397160J	TR 2SC3330 R,S,T,U,V
TR511	ET-397160J	TR 2SC3330 R,S,T,U,V
TR512	ET-397160J	TR 2SC3330 R,S,T,U,V
TR513	ET-356336	TR DTA114ES [EXCEPT EA/ES]
TR514	ET-354414	TR DTC144ES [EXCEPT EA/ES]
TR515	ET-397160J	TR 2SC3330 R,S,T,U,V
TR570	ET-397160J	TR 2SC3330 R,S,T,U,V
TR571	ET-397160J	TR 2SC3330 R,S,T,U,V
TR572	ET-354414	TR DTC144ES
VR301	EV-397066J	R S-FIX H T05EVNDXAA03 0.1W333
VR401	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR402	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR403	EV-389482J	R S-FIX H T05EVNDXAA03 0.1W682
VR404	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
WF201	EW-404138J	CORD KX MA-POW L=220 12P
X301	EI-389640J	OSC X'TAL HC-49/U 8000KHZ
X500	EI-381632J	OSC X'TAL 86686 4.433619MHZ
1A	BV-403236J	VIF UNIT KX EA [EA]
1B	BV-403237J	VIF UNIT KX EDG [EDG]
1C	BV-403241J	VIF UNIT KX EOG [EO/EOG]
1D	BV-403240J	VIF UNIT KX EOH [EOH]
1E	BV-403242J	VIF UNIT KX ES [ES]
2A	EE-387600J1	TV TUNER TERS1-002B EA [EA]
2B	EE-387601J1	TV TUNER TERR1-001B SK [EDG]
2C	EE-387604J1	TV TUNER TERE1-007B EOG [EO/EOG]
2D	EE-390143J1	TV TUNER TERE3-001B EOH [EOH]
2E	EE-403900J	TV TUNER TUMUF3S-292 ES [ES]
3A	SP-388307J	PANEL REAR JACK EA [EA]
3B	SP-395563J	PANEL REAR JACK EDG (2) [EDG]
3C	SP-388305J	PANEL REAR JACK EOG [EOG]
3D	SP-387357J	PANEL REAR JACK EK [EO/EOH]
3E	SP-388306J	PANEL REAR JACK ES [ES]

7. MAIN (B) P.C BOARD

Ref.No.	Part No.	Description
D601	ED-307572	D SILICON H 1SS131
D603	ED-307572	D SILICON H 1SS131 [EXCEPT EA/ES]
D801	ED-307572	D SILICON H 1SS131
D802	ED-307572	D SILICON H 1SS131 [EOG]
FL701	EH-366894	FILTER CE SFE-4.16MB 4.16MHZ [EDG/EOG]
FL801	EO-388362J	COIL OSC 1 V1102
IC601	EI-403965J	IC UPD6450CX-510 KXIMS
IC602	EI-403469J	IC MM1068XS
IC701	EI-366892	IC BA7025L [EDG/EOG]
IC702	EI-200573	IC TC4053BP [ES]
IC801	EI-388360J	IC BA7765AS
L601	EO-345881	COIL FIX 1 EL0606SKI 101J
L602	EO-345876	COIL FIX 1 EL0606SKI 470J
L603	EO-351866	COIL FIX 1 LAP02 F05 330K [EXCEPT EA/ES]
L604	EO-351866	COIL FIX 1 LAP02 F05 330K
L605	EO-345881	COIL FIX 1 EL0606SKI 101J
L606	EO-356722	COIL FIX 1 LAP02 F05 6R8K
L701	EO-345881	COIL FIX 1 EL0606SKI 101J [EDG/EOG/ES]
L702	EO-345881	COIL FIX 1 EL0606SKI 101J [ES]
L801	EO-390717J	COIL FIX 1 LHL06TB T05 103J
L802	EO-390716J	COIL FIX 1 LHL06TB T05 272J
TR601	ET-353899	TR 2SA1317 S,T,U
TR602	ET-354414	TR DTC144ES
TR603	ET-397160J	TR 2SC3330 R,S,T,U,V
TR604	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EA/ES]
TR605	ET-356336	TR DTA114ES [EXCEPT EA/ES]
TR606	ET-356336	TR DTA114ES [EXCEPT EA/ES]
TR607	ET-353899	TR 2SA1317 S,T,U
TR608	ET-353899	TR 2SA1317 S,T,U
TR609	ET-354414	TR DTC144ES [EXCEPT EA/ES]
TR701	ET-397160J	TR 2SC3330 R,S,T,U,V [EDG/EOG/ES]
TR702	ET-397160J	TR 2SC3330 R,S,T,U,V [EDG/EOG]
TR751	ET-397160J	TR 2SC3330 R,S,T,U,V [ES]
TR752	ET-397160J	TR 2SC3330 R,S,T,U,V [ES]
TR753	ET-397160J	TR 2SC3330 R,S,T,U,V [ES]
TR754	ET-397160J	TR 2SC3330 R,S,T,U,V [ES]
TR801	ET-397160J	TR 2SC3330 R,S,T,U,V
TR803	ET-354414	TR DTC144ES [ES]
VC601	EC-394757J	C S-FIX H T05 VCT51F 5.5-30
VL701	EO-366893	COIL VARI 1 21D6 8.20MH [EDG/EOG]
VR801	EV-403967J	R S-FIX V T05EVNDCAA03 0.1W332
VR802	EV-403968J	R S-FIX V T05EVNDCAA03 0.1W473
X601	EI-389974J	OSC XTAL HC-49/U 17.734475MHZ
X602	EI-403467J	OSC CE CSB500F40 15.680KHZ

8. PRE AMP P.C BOARD

Ref.No.	Part No.	Description
IC1	EI-403250J	IC LA7376
L1	EO-376858	COIL FIX 1 LF-5.0S F05 560K
L2	EO-376606	COIL FIX 1 LF-5.0S F05 180K
L3	EO-381195J	COIL FIX 1 EL0405SKI 331K
L4	EO-376859	COIL FIX 1 LF-5.0S F05 8R2K
L5A	EO-381191J	COIL FIX 1 EL0405SKI 181K [EA/ES]
L5B	EO-388088J	COIL FIX 1 EL0405SKI 151K [EXCEPT EA/ES]
L6	EO-376612	COIL FIX 1 LF-5.0S F05 680K
L7	EO-376603	COIL FIX 1 LF-5.0S F05 150K
L8A	EO-381193J	COIL FIX 1 EL0405SKI 271K [EA/ES]
L8B	EO-387803J	COIL FIX 1 EL0405SKI 221K [EXCEPT EA/ES]
L9	EO-345880	COIL FIX 1 EL0606SKI 820J
L10	EO-345880	COIL FIX 1 EL0606SKI 820J
L13	EO-345880	COIL FIX 1 EL0606SKI 820J
L14	EO-376860	COIL FIX 1 LF-5.0S F05 820K
PS1	EJ-381075J	SOCKET HOUSING 5062-30-10-12
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-353899	TR 2SA1317 S,T,U
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V
TR4	ET-364040	TR UN421D
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-353899	TR 2SA1317 S,T,U
TR7	ET-360399	TR DTC114TS [EXCEPT EA/ES]
TR8	ET-397160J	TR 2SC3330 R,S,T,U,V
TR9	ET-360399	TR DTC114TS [ES]
TR10	ET-364040	TR UN421D
TR11	ET-354414	TR DTC144ES [EXCEPT EA/ES]
TR12	ET-397160J	TR 2SC3330 R,S,T,U,V
TR13	ET-353899	TR 2SA1317 S,T,U
TR14	ET-353899	TR 2SA1317 S,T,U
TR15	ET-360399	TR DTC114TS
TR16	ET-397160J	TR 2SC3330 R,S,T,U,V
VR1	EV-390157J	R S-FIX V KVSF639A 0.10W 102
VR2	EV-390157J	R S-FIX V KVSF639A 0.10W 102
VR3	EV-405248J	R S-FIX V T05EVNDCAA03 0.1W471
WP1	EW-403256J	CORD FFC P1.25 L=KBX 12P

9. OPERATION P.C BOARD

Ref.No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131 [EOH]
D2	ED-307572	D SILICON H 1SS131 [EO/EOG/EOH]
D3	ED-307572	D SILICON H 1SS131 [EA]
D5	ED-307572	D SILICON H 1SS131 [ES]
D8	ED-307572	D SILICON H 1SS131 [EDG/EOG]
D9	ED-307572	D SILICON H 1SS131 [EO/EOH]
D10	ED-307572	D SILICON H 1SS131
D11	ED-403278J	D ZENER H UTZJ7.5B
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131
D25	ED-307572	D SILICON H 1SS131
D26	ED-307572	D SILICON H 1SS131
D27	ED-307572	D SILICON H 1SS131
D33	ED-401099J	D SCHOTTKY MA719 T26 40/0.5A [EOG]
FL1	EM-401077J	IND FL FV496G CHARACTER
IB1	EH-403945J	COMP R RGLE9X 103J
IB2	EH-383083J	COMP R RGLE3X 103J
IC1A	EI-405530J	IC UPD75216ACW KBXOPP3-C37 [EA/EO/190EOH/ES]
IC1B	EI-403971J	IC UPD75216ACW KBXOPT1-C09 [EDG]
IC1C	EI-405506J	IC UPD75216ACW KBXOPG2-C36 [EOG]
IC1D	EI-403970J	IC UPD75216ACW KBXOSF1-C07 [220EOH/230EOH]
IC2	EI-394467J	IC X24C01P
IC3	EI-373955	IC S-8053ALR
PH1	ET-381637J2	DETECTOR GP1U521X
PS1	EJ-389815J	SOCKET HOUSING 5062-30-10-15
PS2	EJ-387497J	SOCKET HOUSING 5062-30-10-13
SW1A	ES-403249J	SW TACT EVQ-QKK08Q [EXCEPT EA,RESET]
SW1B	ES-403973J	SW TACT EVQ-QEK06K [EA,RESET]
SW2	ES-349474	SW TACT SKHHAM004A [POWER]
SW3	ES-349474	SW TACT SKHHAM004A [STOP/EJECT]
SW4	ES-349474	SW TACT SKHHAM004A [REW]
SW5	ES-349474	SW TACT SKHHAM004A [FWD]
SW6	ES-349474	SW TACT SKHHAM004A [REC]
SW7	ES-349474	SW TACT SKHHAM004A [I-HQ]
SW8	ES-349474	SW TACT SKHHAM004A [PLAY]
SW9	ES-349474	SW TACT SKHHAM004A [CH]
TR1	ET-354414	TR DTC144ES
WP1	EW-394623J	CORD FFC P1.25 L=110 15P
WP2	EW-389313J	CORD FFC P1.25 L=120 13P
X1	EI-373957J1	OSC CE CST4.19MGW 4.194MHZ
X2	EI-368825	OSC X'TAL MX-38T 32.768KHZ

10. VIF UNIT (EA,EOG,EOH)

Ref.No.	Part No.	Description
CF1A	EH-714626	FILTER SAW SAF36.9MZ70Z [EA]
CF1B	EH-730625J	FILTER CE SAF38.9MZW70Z [EOG/EOH]
CF2	EH-373920	FILTER CE SFE5.5MB
CF3	EH-368948	FILTER CE TPS5.5MW 5.5000MHZ
IC1	EI-368809	IC M51496P
L1	EO-387800J	COIL FIX 1 EL0405SKI 2R7K
L3	EO-725953J	COIL SIF DET 6F16263A2
L4A	EO-714616	COIL RF 6F16115B3 [EA]
L4B	EO-714614	COIL RF 6F16115B1 [EOG/EOH]
L5A	EO-714613	COIL RF 6R16113B3 [EA]
L5B	EO-714610	COIL RF 6F16113B1 [EOG/EOH]
L6	EO-387799J	COIL FIX 1 EL0405SKI 180K
L7A	EO-387799J	COIL FIX 1 EL0405SKI 180K [EA/EOG]
L7B	EO-387798J	COIL FIX 1 EL0405SKI 150K [EOH]
L8	EO-387802J	COIL FIX 1 EL0405SKI 330K
L51	EO-725964J	COIL TRAP 6F16222A1 [EOG]
L52	EO-725965J	COIL TRAP 6F16223A1 [EOG]
Q1	ET-725820J	TR CHIP 2SC2735J
Q2	ET-713614	TR CHIP 2SA1235 E,F
Q51	ET-724885J	TR CHIP RT1N141C [EOG]
Q52	ET-724885J	TR CHIP RT1N141C [EOG]
VR2	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W22
VR51	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W22
VR52	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W22 [EOG]

11. VIF UNIT (EDG)

Ref.No.	Part No.	Description
CF1	EH-368816	FILTER CE SAF38.0MZA70Z
CF2	EH-376338	FILTER CE TPS6.5MB
CF3	EH-368948	FILTER CE TPS5.5MW 5.5000MHZ
CF4	EH-373918	FILTER CE TPS5.5MB
CF51	EH-388287J	FILTER CE SFS6.5MX 6.500MHZ
CF52	EH-368827	FILTER CE SFS5.5MD 5.500MHZ
CF53	EH-780128	FILTER CE SFE 6.5MB
IC1	EI-368809	IC M51496P
L1	EO-387782J	COIL FIX 1 EL0405SKI 2R2K
L2	EO-725954J	COIL SIF DET 6F16263A3
L3	EO-714614	COIL RF 6F16115B1
L4	EO-714610	COIL RF 6F16113B1
L5	EO-397238J	COIL FIX 1 EL0405SKI 6R8K
L6	EO-387798J	COIL FIX 1 EL0405SKI 150K
L51	EO-396361J	COIL FIX 1 EL0405SKI 8R2K
L52	EO-387803J	COIL FIX 1 EL0405SKI 221K
Q1	ET-725820J	TR CHIP 2SC2735J
Q2	ET-713614	TR CHIP 2SA1235 E,F
Q3	ET-370819	TR CHIP 2SC3052
Q4	ET-713614	TR CHIP 2SA1235 E,F
Q51	ET-370819	TR CHIP 2SC3052
Q52	ET-370819	TR CHIP 2SC3052
VR1	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W22
VR2	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W22
X51	EI-368829	OSC CE CSB512P

12. VIF UNIT (ES)

Ref.No.	Part No.	Description
CF1	EH-714627	FILTER SAW SAF38.9MW70Z
CF2	EH-373921	FILTER CE SFE6.0MB
CF3	EH-373919	FILTER CE TPS6.0MB
IC1	EI-368809	IC M51496P
L1	EO-387800J	COIL FIX 1 EL0405SKI 2R7K
L3	EO-725954J	COIL SIF DET 6F16263A3
L4	EO-714614	COIL RF 6F16115B1
L5	EO-714610	COIL RF 6F16113B1
L6	EO-387798J	COIL FIX 1 EL0405SKI 150K
L7	EO-387798J	COIL FIX 1 EL0405SKI 150K
L8	EO-387802J	COIL FIX 1 EL0405SKI 330K
Q1	ET-725820J	TR CHIP 2SC2735J
Q2	ET-713614	TR CHIP 2SA1235 E,F
VR2	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W222
VR51	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223

13. POWER SUPPLY P.C BOARD

Ref.No.	Part No.	Description
C1	EC-406634J	C EC V SXE12 222M 25.0DC
C2	EC-363490	C EC V CUT SME 222M 16.0DC
C3	EC-406635J	C EC V SXE16 222M 35.0DC
D1	*ED-511907	D SILICON 1N4002 100/1.0A
D2	*ED-511907	D SILICON 1N4002 100/1.0A
D3	*ED-511907	D SILICON 1N4002 100/1.0A
D4	*ED-511907	D SILICON 1N4002 100/1.0A
D5	*ED-511907	D SILICON 1N4002 100/1.0A [EA/EDG/ES]
D6	*ED-511907	D SILICON 1N4002 100/1.0A [EA/EDG/ES]
D7	*ED-511907	D SILICON 1N4002 100/1.0A [EA/EDG/ES]
D8	*ED-511907	D SILICON 1N4002 100/1.0A [EA/EDG/ES]
D9	*ED-511907	D SILICON 1N4002 100/1.0A
D10	*ED-511907	D SILICON 1N4002 100/1.0A [EA/EDG/ES]
D11	*ED-511907	D SILICON 1N4002 100/1.0A
D12	*ED-511907	D SILICON 1N4002 100/1.0A [EA/EDG/ES]
D13	ED-405373J	D ZENER H MTZJ16A T26
D14	ED-404032J	D ZENER H UTZJ39A
D15	ED-405524J	D ZENER H MTZJ36A T26
D16	*ED-404029J	D ZENER H UTZJ10B T26
FL	*EO-339907	COIL LF FKOB160MH16 1000.0UH [EOG]
FR1	*ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
FR2	*ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
FR3	*ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
FR4	*ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
FR5	*ER-400605J	R FUSE V T05 ERD2FCV 1/4W15R0G
TR1	*ET-381175J	TR 2SD1856
TR2	*ET-366365	TR 2SB1185 E,F
TR3	*ET-380685J	TR 2SD1761 E,F,G
TR4	*ET-380685J	TR 2SD1761 E,F,G
TR5	*ET-380685J	TR 2SD1761 E,F,G
TR6	*ET-380685J	TR 2SD1761 E,F,G
TR7	*ET-366365	TR 2SB1185 E,F

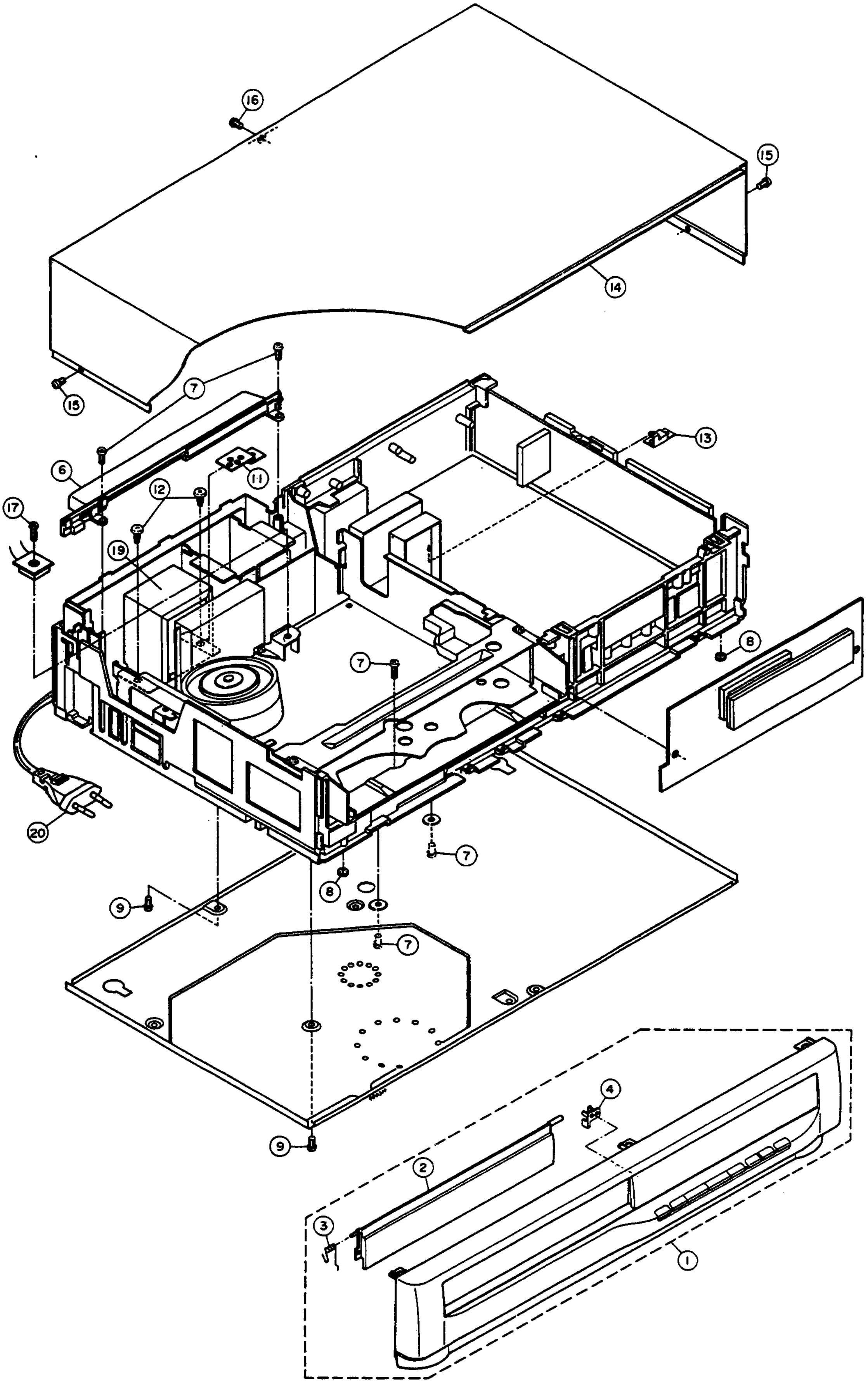
14. DIODE P.C BOARD (EO,EOG,EOH)

Ref.No.	Part No.	Description
D1	*ED-379298	D SILICON DBA20B 100/2.0A [EO/EOG/EOH]

15. VPS P.C BOARD (EOG ONLY)

Ref.No.	Part No.	Description
D101	ED-307572	D SILICON H 1SS131
D700	ED-307572	D SILICON H 1SS131
D701	ED-405446J	D ZENER H UTZJ5.6B T26
FL101	EH-394684J	FILTER EMI ZBF503D-00TA T05
FR700	ER-331188	R FUSE H S10 ERD2FC 1/4W 8R2J
IB101	EH-401244J	COMP R RGLD7X103J
IC101	EI-385958J	IC SAA4700
IC102	EI-390147J	IC MB88505HP-1097M SXVPS1
L101	EO-345865	COIL FIX 1 EL0606SKI 100J
L102	EO-345865	COIL FIX 1 EL0606SKI 100J
L103	EO-345865	COIL FIX 1 EL0606SKI 100J
TR101	ET-397160J	TR 2SC3330 R,S,T,U,V
TR700	ET-354083	TR 2SD1189 Q,R
X101	EI-373957J1	OSC CE CST4.19MGW 4.194MHZ

FINAL ASSEMBLY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16. FINAL ASSEMBLY

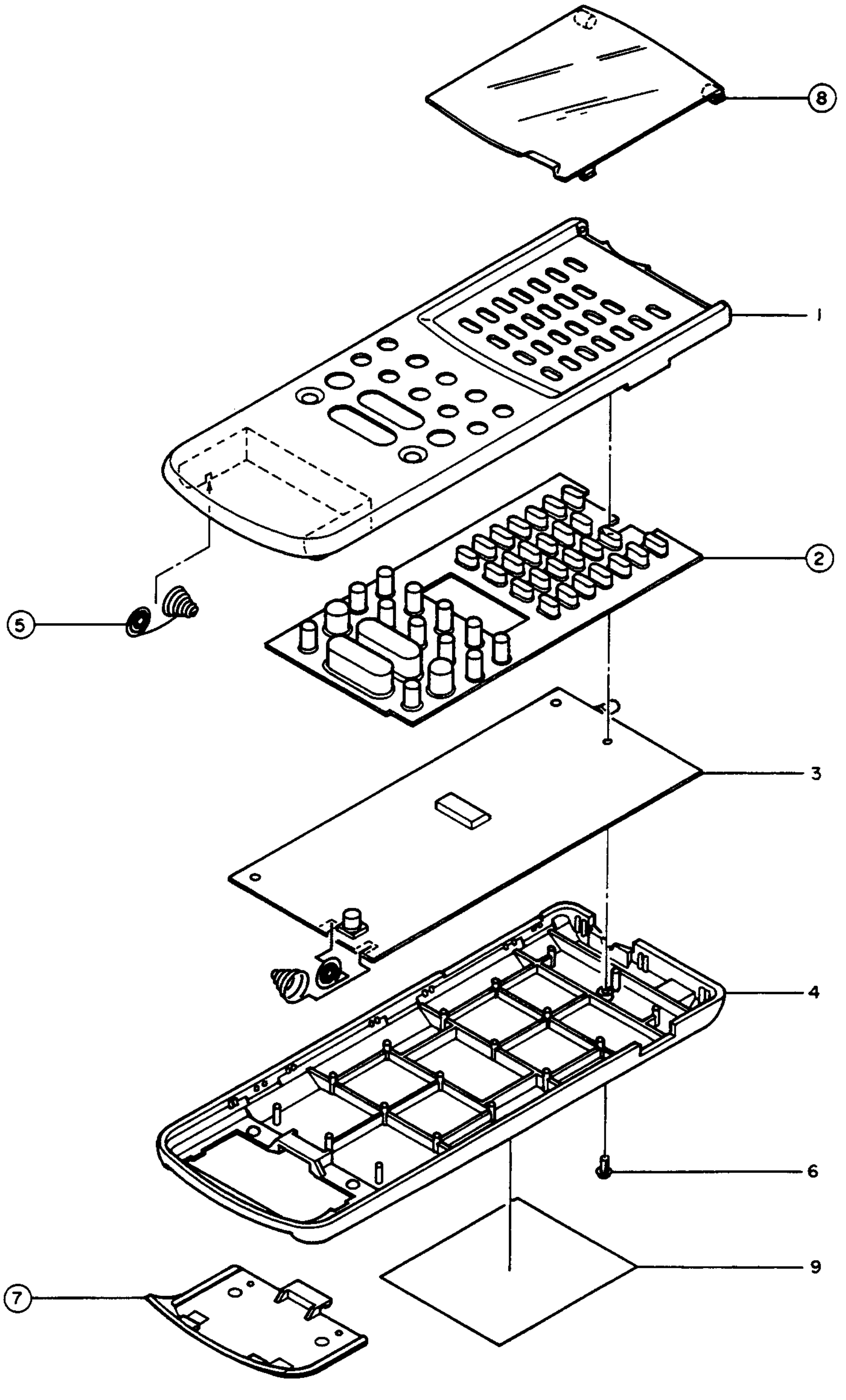
Ref.No.	Part No.	Description
1A	BD-406060J	PANEL FRONT VS-F180EO PART
1B	BD-406050J	PANEL FRONT VS-F190EOH PART
1C	BD-402822J2	PANEL FRONT VS-F200EOG PART
1D	BD-402789J2	PANEL FRONT VS-F220EDG PART
1E	BD-404881J	PANEL FRONT VS-F220EOH PART
1F	BD-402786J2	PANEL FRONT VS-F222EA PART
1G	BD-405004J2	PANEL FRONT VS-F230EOH PART
1H	BD-402791J2	PANEL FRONT VS-F240ES PART
2A	SE-406061J	MASK CASSETTE VS-F180 (E) [F180EO]
2B	SE-406051J	MASK CASSETTE VS-F190 (E) [F190EOH]
2C	SE-402936J1	MASK CASSETTE VS-F200 (G) [F200EOG]
2D	SE-402939J1	MASK CASSETTE VS-F220 (E) [F220EDG]
2E	SE-404875J	MASK CASSETTE VS-F220 (E) [F220EOH]
2F	SE-404958J1	MASK CASSETTE VS-F222 (E) [F222EA]
2G	SE-405002J1	MASK CASSETTE VS-F230 (E) [F230EOH]
2H	SE-402943J1	MASK CASSETTE VS-F240 (E) [F240ES]
3	ZG-387370J	SP MASK
4	SZ-401874J	STOPPER MASK
6	SC-387353J	COVER TRANS
7	ZS-362378	PLX BID30X10STL CMT
8	SA-387507J	FOOT SX
9	ZS-358936	ST BID30X06STL CMT
11	ZG-387505J	PLATE EARTH
12	ZS-373962	PLX BID40X10STL CMT
13	ZG-387354J	PLATE EARTH (2)
14	SP-395632J1	COVER UPPER P SUEDE (2)
15	ZS-385611J	DT BID26X06STL BNI
16	ZS-391046J	PLX BID26X10STL BNI
17	ZS-357946	PLX PAN30X10STL CMT C080
19A	*BT-403252J	TRANS POW V1130 EA [EA]
19B	*BT-403873J	TRANS POW V1130 EO [EO/EOG/EOH]
19C	*BT-403874J	TRANS POW V1130 EDG [EDG]
19D	*BT-404028J	TRANS POW V1130 ES [ES]
20A	*EW-404003M	AC CORD 200 SA-2 WITH TUBE S [EA]
20B	*EW-404002M	AC CORD 200 SE-1 WITH TUBE E [EXCEPT EA]

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

17. ACCESSARRY

Ref.No.	Part No.	Description
1	EW-348414	CORD PAL
2A	AV-B1022A010A	REMOCON BLK RC-V200E [EXCEPT EOG/F230EOH]
2B	AV-B1022A010C	REMOCON BLK RC-V200G [EOG]
2C	AV-B1024A010A	REMOCON BLK RC-V202E [F230EOH]

REMOCON RC-V200E/V200G



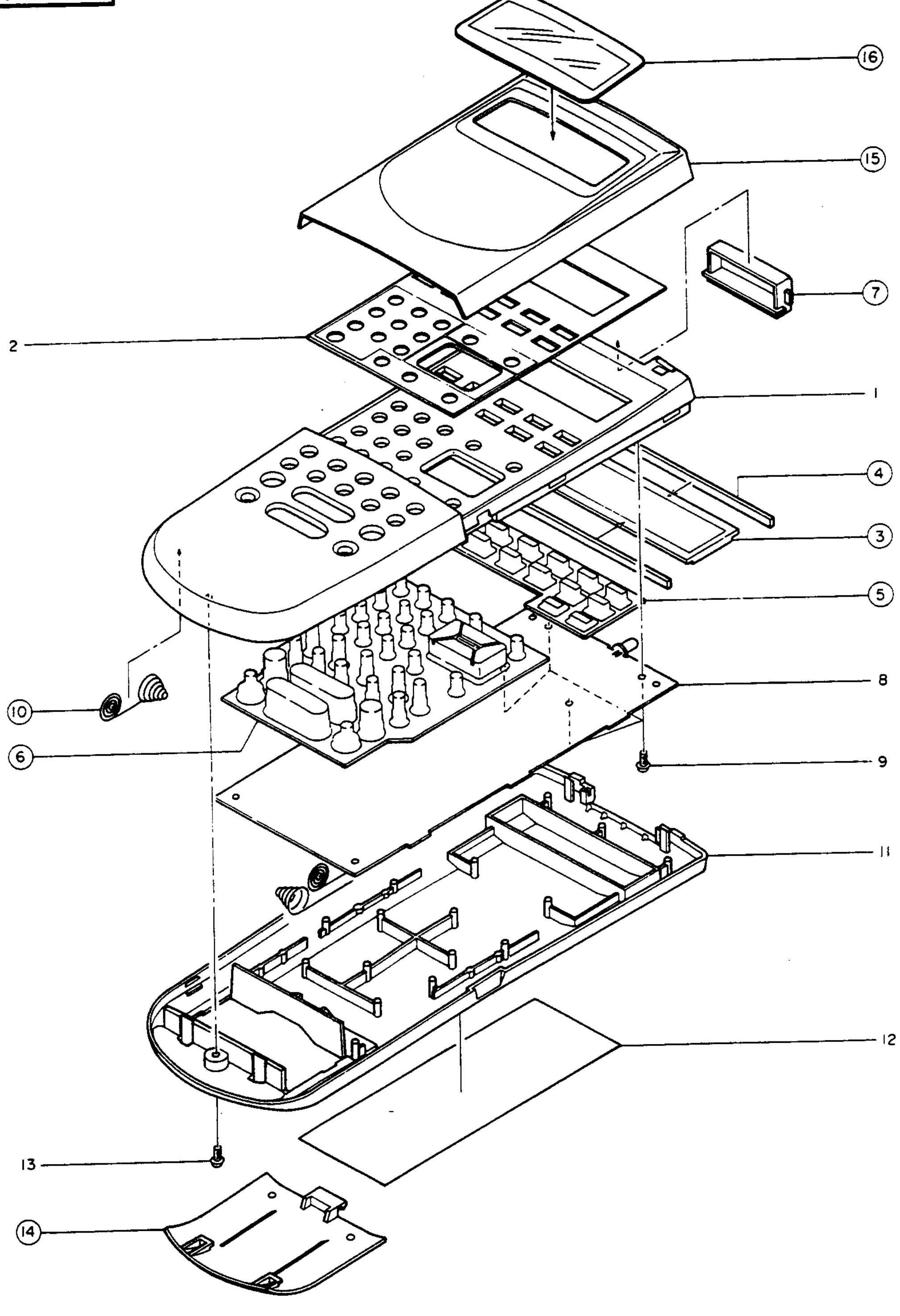
18. REMOCON RC-V200E/V200G

Ref.No.	Part No.	Description
2	MB-402705J	KEY RUBBER
5	ZG-394389J	TERMINAL BATTERY (Q3)
7	SC-394382J	COVER BATTERY (N)-2
8	SP-394383J1	DOOR PANEL

19. REMOCON P.C BOARD RC-V200

Ref.No.	Part No.	Description
D1	ED-390686J	D LED TLN105B INFRARED
D2	ED-386031J	D SILICON CHIP MA110-TW
D3	ED-386031J	D SILICON CHIP MA110-TW
D4	ED-386031J	D SILICON CHIP MA110-TW
IC1	EI-376112	IC UPD6122G
TR1	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
X1	EI-390687J	OSC CE CSU455PL 455KHZ
1	ZG-402706J	TERMINAL BATTERY (U1)
2	ZG-402685J	TERMINAL BATTERY (U2)

REMOCON RC-V202E



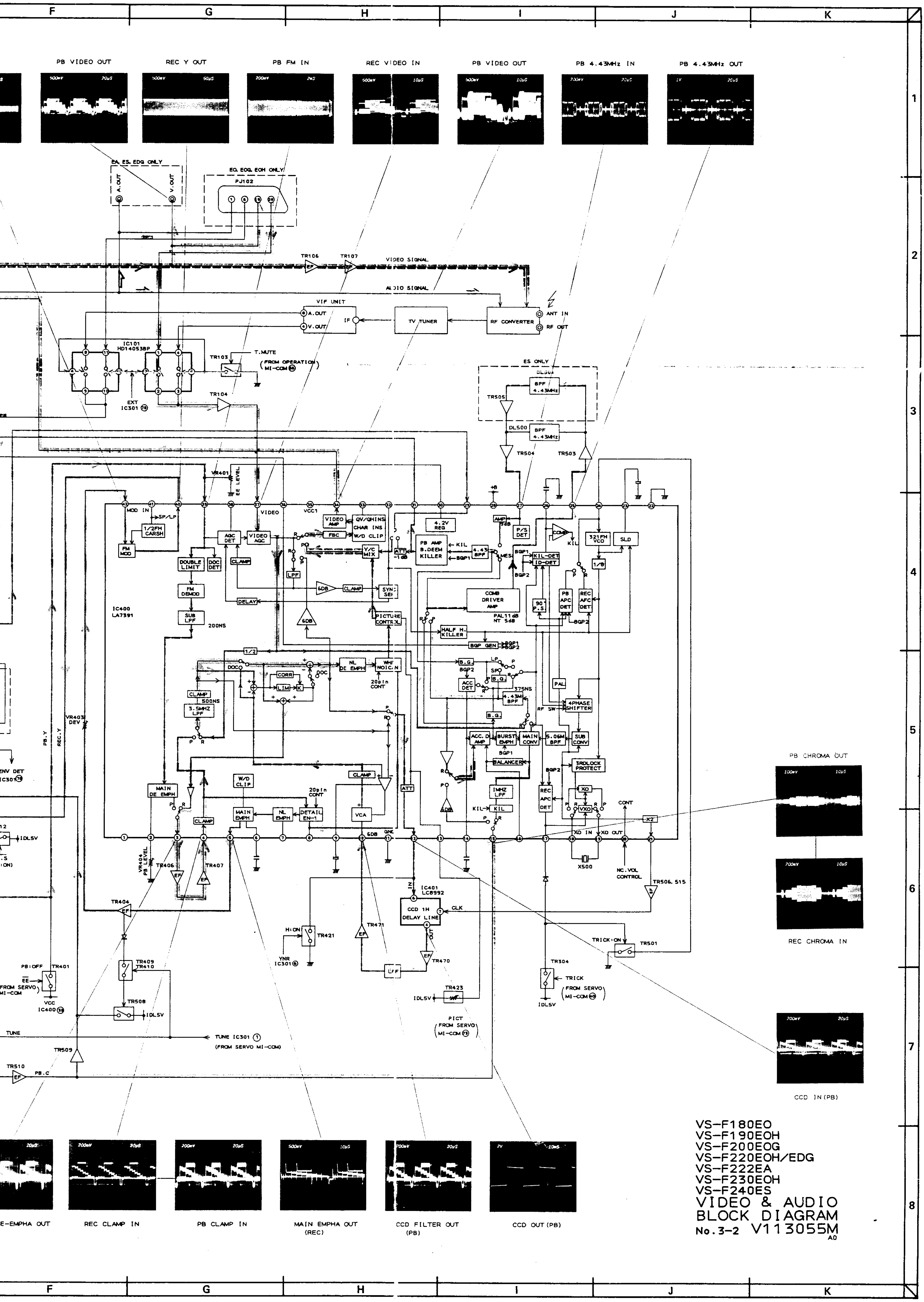
20. REMOCON RC-V202E

Ref.No.	Part No.	Description
3	EM-403448J	IND LCD LF5381G ENGLISH
4	EJ-403095J	TERMINAL LCD (3) B1024
5	MB-403109J	KEY RUBBER (S3)
6	MB-403125J	KEY RUBBER (L)
7	SE-403111J	FILTER
10	ZG-403100J	TERMINAL BATTERY (+-)
14	SC-403133J	COVER BATTERY
15	SP-403126J1	DOOR PANEL (L)
16	SP-403096J1	WINDOW LCD

21. REMOCON P.C BOARD RC-V202

Ref.No.	Part No.	Description
D1	ED-403450J	D LED SE303ARF-C INFRARED
IC1	EI-405245J	IC M50933-123FP HKHREM3
IC2	EI-400672J	IC S-8052ALB-LE
TR1	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
X1	EI-368825	OSC X'TAL MX-38T 32.768KHZ
X2	EI-403451J	OSC CE CSB1200J 1.200MHZ
1	ZG-403098J	TERMINAL BATTERY (+)
2	ZG-403099J	TERMINAL BATTERY (-)

MEMO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REC Y OUT
PB FM IN
REC VIDEO IN
PB VIDEO OUT
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PB 4.43MHz OUT
500mV 20µS
500mV 50µS
200mV 2mS
500mV 10µS
700mV 20µS
1V 20µS
EA, ES, EDG ONLY
A.OUT
V.OUT
EO, EOG, EOH ONLY
PJ102
TR106
TR107
EF
VIDEO SIGNAL
AUDIO SIGNAL
VIF UNIT
A.OUT
V.OUT
IF
TV TUNER
RF CONVERTER
ANT IN
RF OUT
IC101
HD14053BP
TR103
T.MUTE
(FROM OPERATION MI-COM ⑬)
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TR104
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DL501
BPF 4.43MHz
TR505
DL500
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TR504
TR503
VR401
EE LEVEL
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1/2FH CARSH
FM MOD
VIDEO
VCC1
AGC DET
VIDEO AGC
VIDEO AMP
QV/QHINS
CHAR INS
W/D CLIP
FBC
Y/C MIX
ATT -1dB
4.2V REG
PB AMP B.DEEM KILLER
KIL
BGP1
4.43 BPF
MES
+8
AMP 9dB
P/S DET
COMP
KIL-DET
ID-DET
BGP2
321FH VCO
SLD
1/8
DOUBLE LIMIT
DOC DET
CLAMP
LPF
6DB
SYNC SEP
DELAY
FM DEMOD
SUB LPF
200NS
IC400
LA7391
PICTURE CONTROL
COMB DRIVER AMP
PAL 11dB
NT 5dB
HALF H. KILLER
BGP GEN
90° P.S
PB APC DET
REC AFC DET
1/2
NL DE EMPH
WHF NOIC.N
20pin CONT
DOC
CORR
LIM
K
CLAMP
500NS
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B.G.
LP
SP
ACC DET
375NS
4.43M BPF
PAL
4PHASE SHIFTER
RF SW
ACC. D AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RDLOCK PROTECT
1MHZ LPF
KIL
REC APC DET
XO
VXO
CONT
X2
XO IN
XO OUT
X500
NC. VOL CONTROL
TR506, 515
VR403 DEV
PB.Y
REC.Y
ENV DET
IC301 ⑲
MAIN DE EMPH
W/D CLIP
MAIN EMPH
NL EMPH
DETAIL EN-1
VCA
ATT
6DB
GND
IDL5V
VR404 PB LEVEL
TR406
TR407
EF
TR404
IC401
LC8992
IN
CCD 1H DELAY LINE
CLK
OUT
TR471
TR470
LPF
H:ON
TR421
YNR
IC301 ⑥
TR423
IDL5V
PICT
(FROM SERVO MI-COM ㉓)
TR304
TRICK
(FROM SERVO MI-COM ㊵)
IDL5V
TRICK:ON
TR501
PB:OFF
TR401
EE
FROM SERVO MI-COM
VCC
IC400 ㊳
TR409
TR410
TR508
IDL5V
TUNE
TUNE IC301 ①
(FROM SERVO MI-COM)
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TR510
PB.C
PB CHROMA OUT
100mV 10µS
REC CHROMA IN
700mV 10µS
CCD IN (PB)
700mV 20µS
E-EMPHA OUT
REC CLAMP IN
PB CLAMP IN
MAIN EMPHA OUT (REC)
CCD FILTER OUT (PB)
CCD OUT (PB)
200mV 20µS
500mV 10µS
700mV 20µS
2V 10mS

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
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VS-F240ES
VIDEO & AUDIO
BLOCK DIAGRAM
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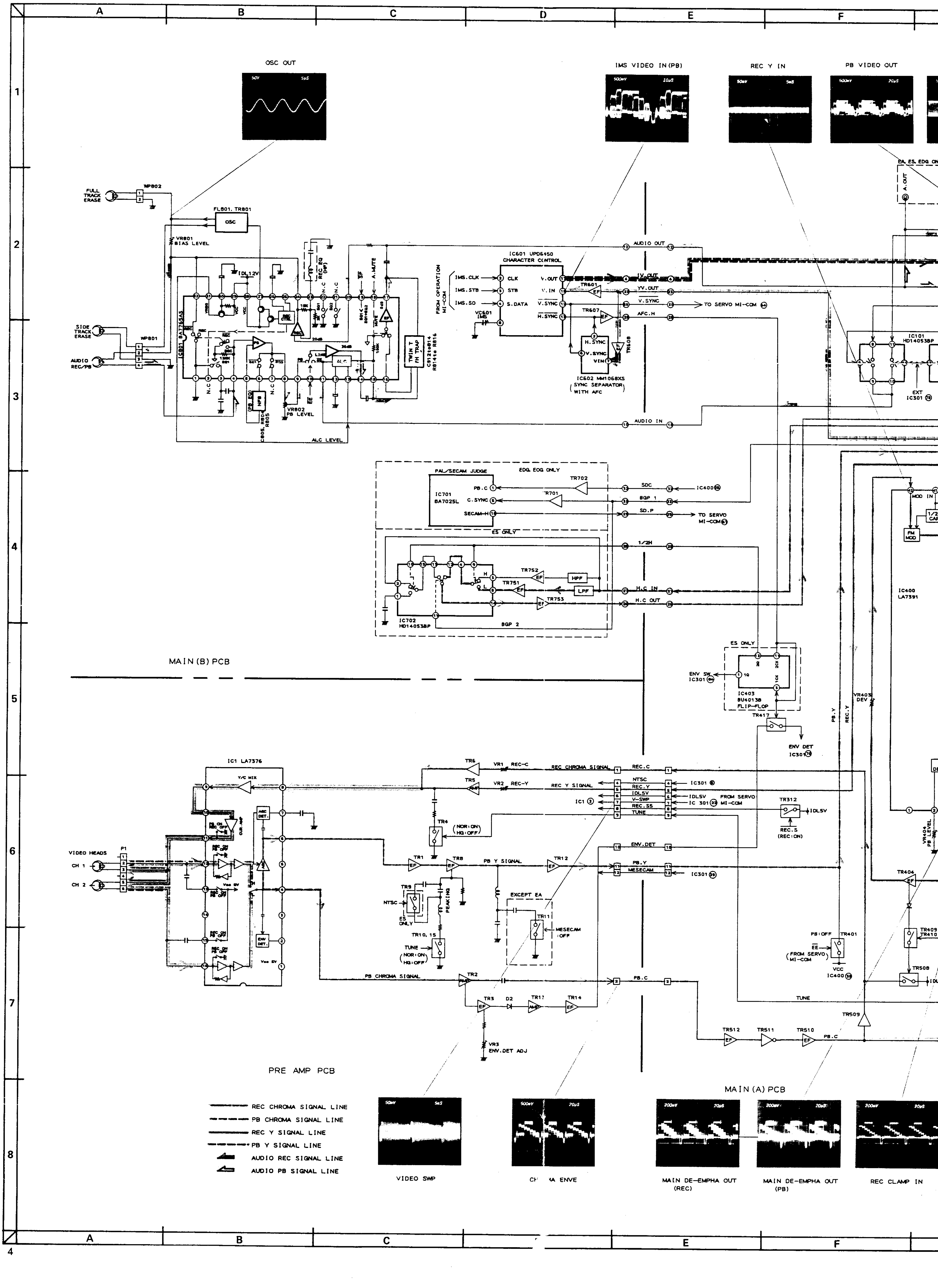
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FULL TRACK ERASE
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OSC
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SIDE TRACK ERASE
WP801
AUDIO REC/PB
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REC EQ (HP)
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PB EQ
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STB
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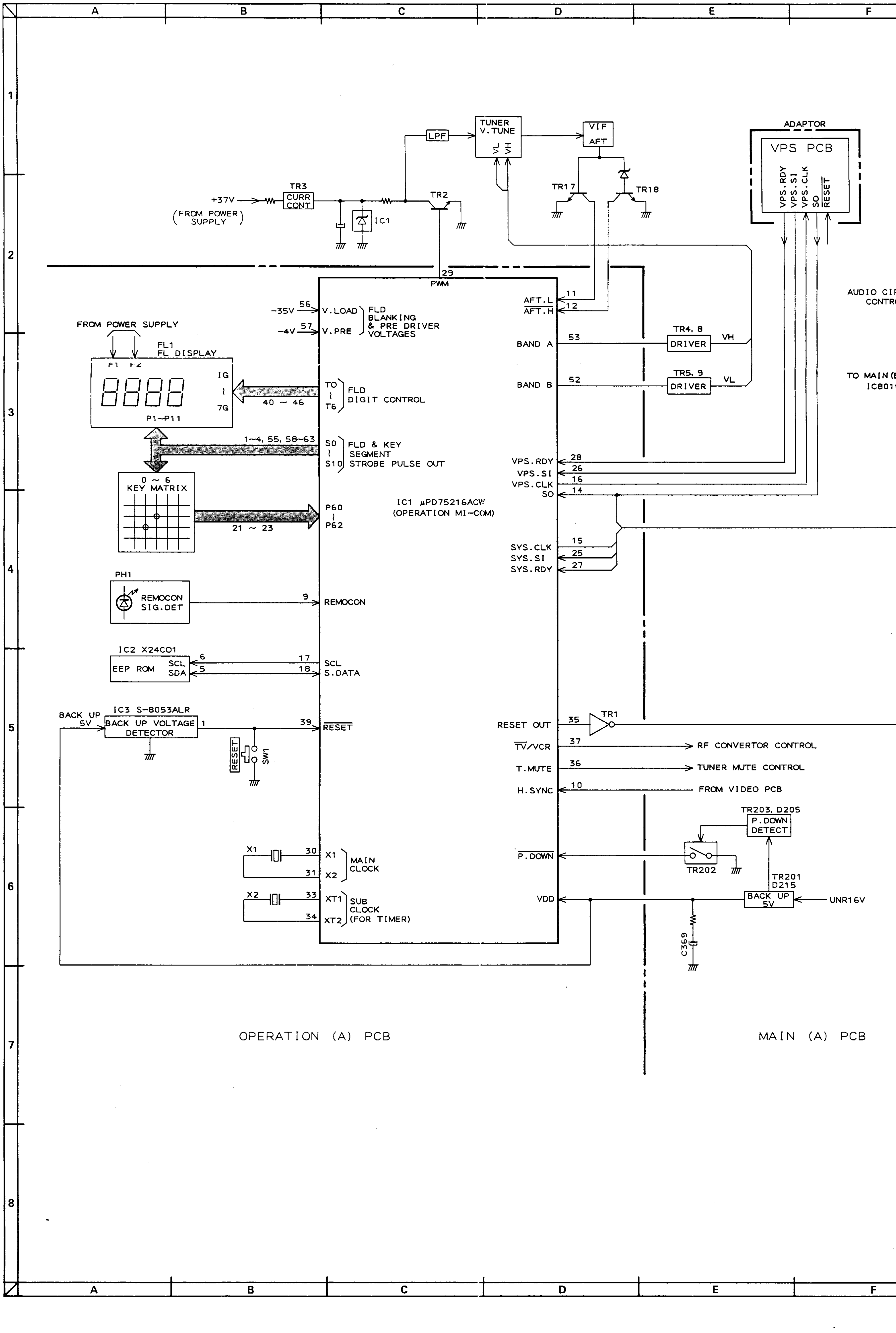
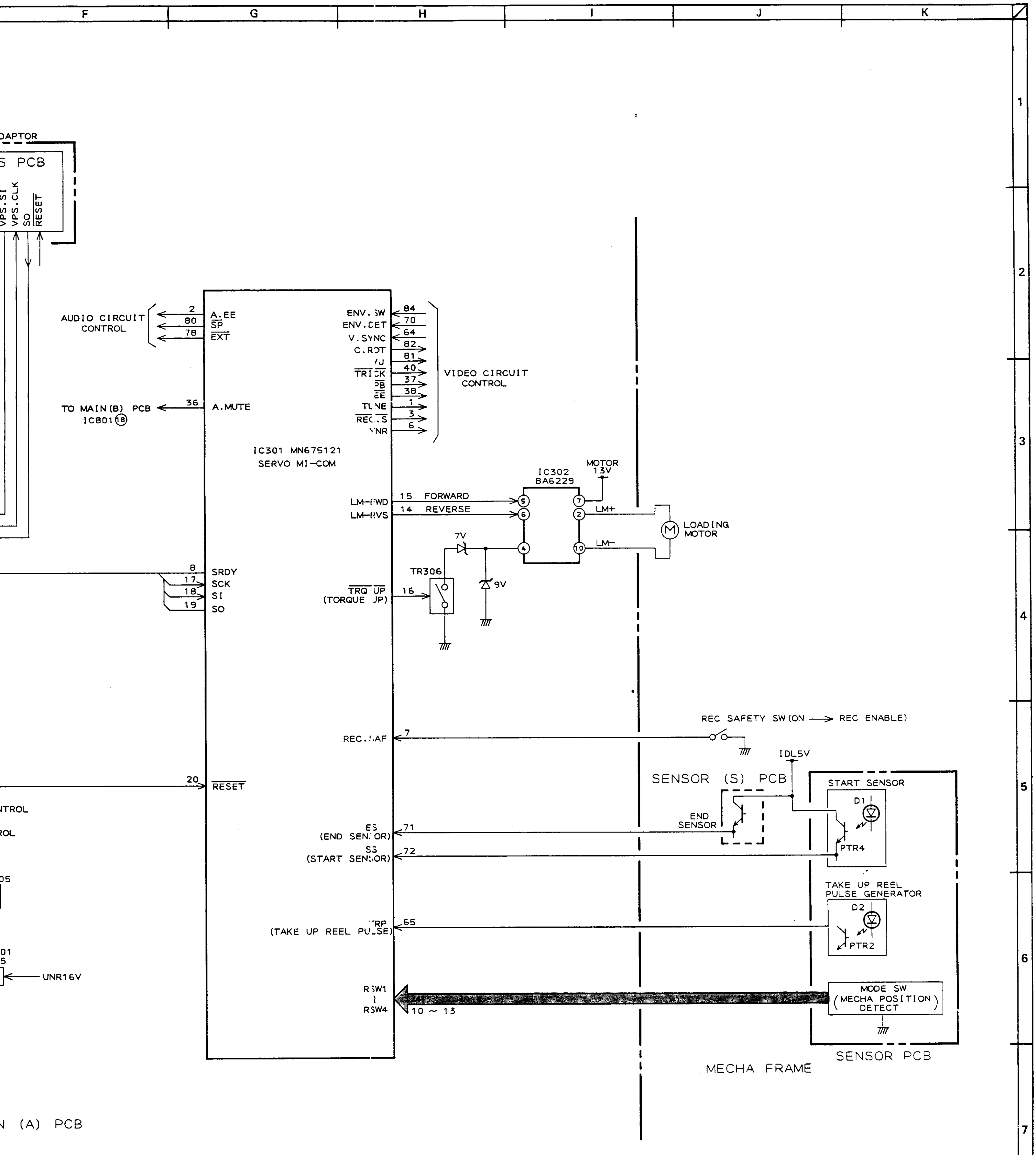
V.OUT
V.IN
V.SYNC
H.SYNC
TR601
TR607
TR608
YV.OUT
V.SYNC
AFC.H
TO SERVO MI-COM
IC602 MM1068XS SYNC SEPARATOR WITH AFC
H.SYNC
V.SYNC
VIN
IC101 HD14053BP
EXT IC301
A.OUT
EA, ES, EDG ONLY
PAL/SECAM JUDGE
EDG, EOG ONLY
IC701 BA7025L
PB.C
C.SYNC
SECAM-H
TR702
TR701
SDC
BGP 1
SD.P
IC400
TO SERVO MI-COM
ES ONLY
TR752
TR751
TR753
HPF
LPF
H
L
1/2H
H.C IN
H.C OUT
IC702 HD14053BP
BGP 2
IC400 LA7391
MOD IN
FM MOD
MAIN (B) PCB
ES ONLY
ENV SW IC301
IC403 BU4013B FLIP-FLOP
TR417
ENV DET IC301
PB.Y
REC.Y
VR403 DEV
IC1 LA7376
Y/C MIX
TR6
TR5
VR1 REC-C
VR2 REC-Y
REC CHROMA SIGNAL
REC Y SIGNAL
REC.C
NTSC
REC.Y
IDL5V
V-SWP
REC.SS
TUNE
IC301
IC1
IC 301 MI-COM
FROM SERVO
TR312
IDL5V
REC.S (REC:ON)
TR4
(NOR:ON HG:OFF)
VIDEO HEADS
P1
CH 1
CH 2
TR1
TR8
PB Y SIGNAL
TR12
ENV.DET
PB.Y
MESECAM
IC301
TR9
NTSC
ES ONLY
PEAKING
TR10, 15
TUNE (NOR:ON HG:OFF)
EXCEPT EA
TR11
MESECAM :OFF
PB:OFF
TR401
EE (FROM SERVO MI-COM)
VCC IC400
TR404
VR404 PB LEVEL
TR409 TR410
TR508
PB CHROMA SIGNAL
TR2
PB.C
TR3
D2
TR13
TR14
VR3 ENV.DET ADJ
TUNE
TR509
TR512
TR511
TR510
PB.C
PRE AMP PCB
MAIN (A) PCB
REC CHROMA SIGNAL LINE
PB CHROMA SIGNAL LINE
REC Y SIGNAL LINE
PB Y SIGNAL LINE
AUDIO REC SIGNAL LINE
AUDIO PB SIGNAL LINE
VIDEO SWP
CH A ENVE
MAIN DE-EMPHA OUT (REC)
MAIN DE-EMPHA OUT (PB)
REC CLAMP IN
4


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TUNER
V.TUNE
VL
VH
LPF
VIF
AFT
ADAPTOR
VPS PCB
VPS.RDY
VPS.SI
VPS.CLK
SO
RESET
TR17
TR18
+37V
TR3
CURR CONT
(FROM POWER SUPPLY)
IC1
TR2
29
PWM
-35V
56
V.LOAD
-4V
57
V.PRE
FLD BLANKING & PRE DRIVER VOLTAGES
AFT.L
AFT.H
11
12
AUDIO CIR
CONTR
FROM POWER SUPPLY
FL1
FL DISPLAY
F1
F2
IG
~
7G
P1~P11
BAND A
53
TR4, 8
DRIVER
VH
BAND B
52
TR5, 9
DRIVER
VL
TO MAIN(
IC801
40 ~ 46
T0
~
T6
FLD DIGIT CONTROL
1~4, 55, 58~63
S0
~
S10
FLD & KEY SEGMENT STROBE PULSE OUT
VPS.RDY
28
VPS.SI
26
VPS.CLK
16
SO
14
0 ~ 6
KEY MATRIX
P60
~
P62
21 ~ 23
IC1 μPD75216ACW
(OPERATION MI-COM)
SYS.CLK
15
SYS.SI
25
SYS.RDY
27
PH1
REMOCON SIG.DET
9
REMOCON
IC2 X24C01
EEP ROM
SCL
SDA
6
5
17
18
SCL
S.DATA
BACK UP 5V
IC3 S-8053ALR
BACK UP VOLTAGE DETECTOR
1
39
RESET
RESET
SW1
RESET OUT
35
TR1
TV/VCR
37
RF CONVERTOR CONTROL
T.MUTE
36
TUNER MUTE CONTROL
H.SYNC
10
FROM VIDEO PCB
TR203, D205
P.DOWN DETECT
X1
30
X1
31
X2
MAIN CLOCK
P.DOWN
TR202
TR201
D215
BACK UP 5V
UNR16V
X2
33
XT1
34
XT2
SUB CLOCK (FOR TIMER)
VDD
C369
OPERATION (A) PCB
MAIN (A) PCB

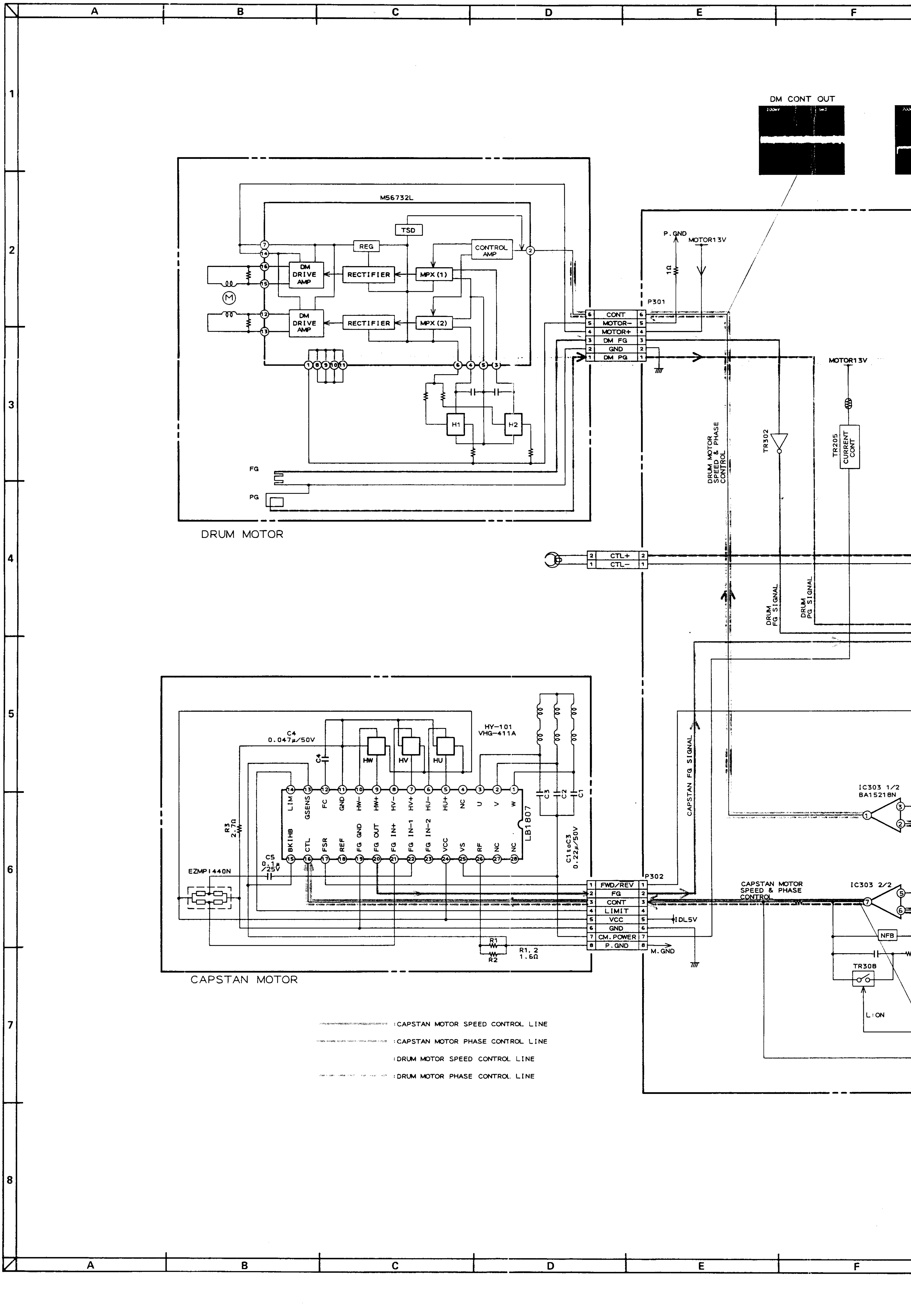

F
G
H
I
J
K
1
2
3
4
5
6
7
DAPTOR
S PCB
VPS.SI
VPS.CLK
SO
RESET
AUDIO CIRCUIT CONTROL
2
80
78
A.EE
SP
EXT
TO MAIN (B) PCB
IC801⑱
36
A.MUTE
IC301 MN675121
SERVO MI-COM
ENV.SW
ENV.DET
V.SYNC
C.ROT
V/J
TRICK
PB
EE
TUNE
REC.S
YNR
84
70
64
82
81
40
37
38
1
3
6
VIDEO CIRCUIT CONTROL
LM-FWD
LM-RVS
15 FORWARD
14 REVERSE
IC302
BA6229
MOTOR 13V
⑤
⑥
④
⑦
②
⑩
LM+
LM-
LOADING MOTOR
M
7V
9V
TR306
TRQ UP
(TORQUE UP)
16
8
17
18
19
SRDY
SCK
SI
SO
REC.SAF
7
REC SAFETY SW (ON ⟶ REC ENABLE)
IDL5V
20
RESET
NTROL
ROL
05
01
5
UNR16V
SENSOR (S) PCB
END SENSOR
START SENSOR
D1
PTR4
ES
(END SENSOR)
71
SS
(START SENSOR)
72
TAKE UP REEL PULSE GENERATOR
D2
PTR2
TRP
(TAKE UP REEL PULSE)
65
RSW1
~
RSW4
10 ~ 13
MODE SW
(MECHA POSITION DETECT)
SENSOR PCB
MECHA FRAME
N (A) PCB

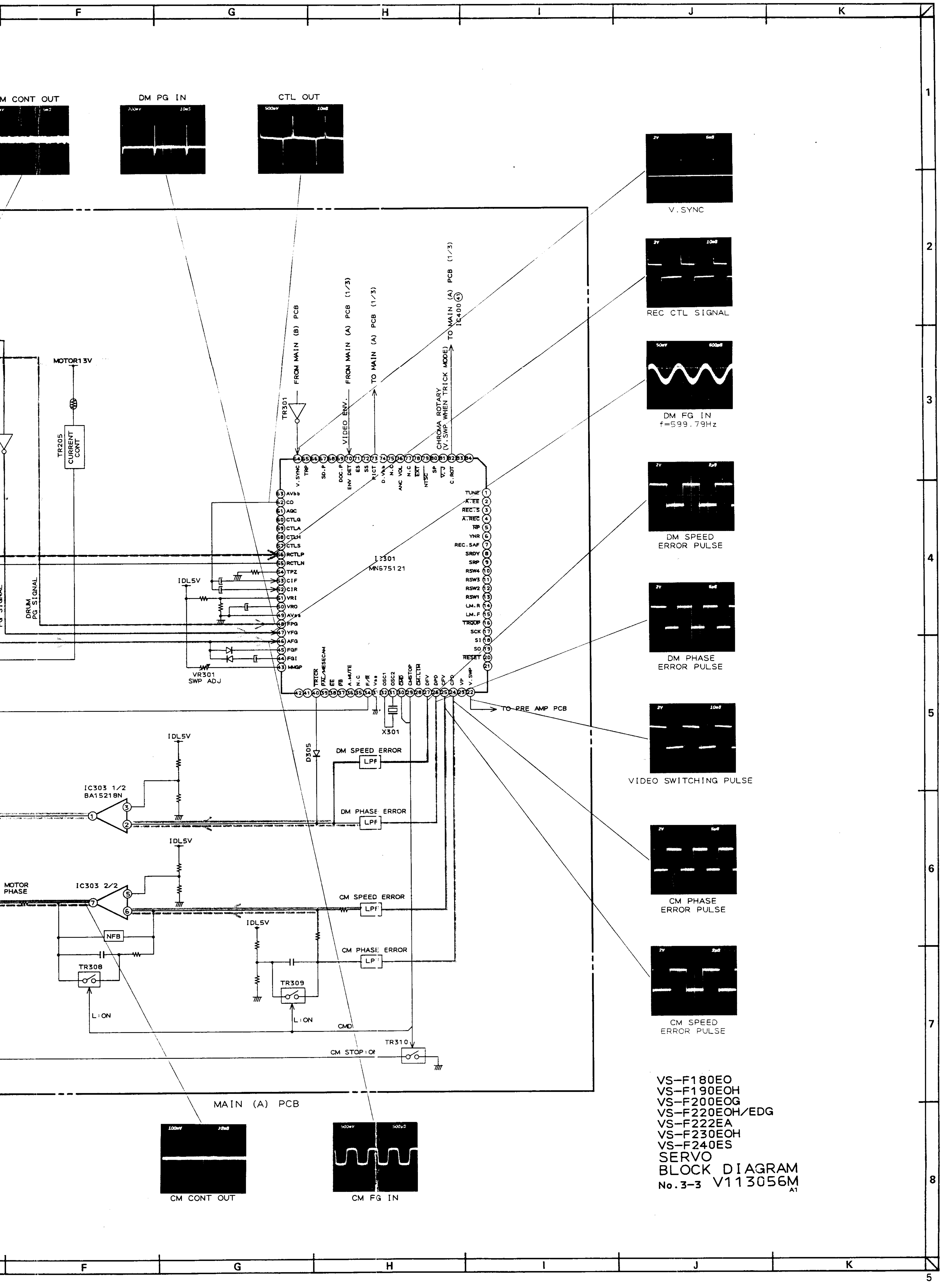
VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES

OPERATION & SYSCON BLOCK DIAGRAM

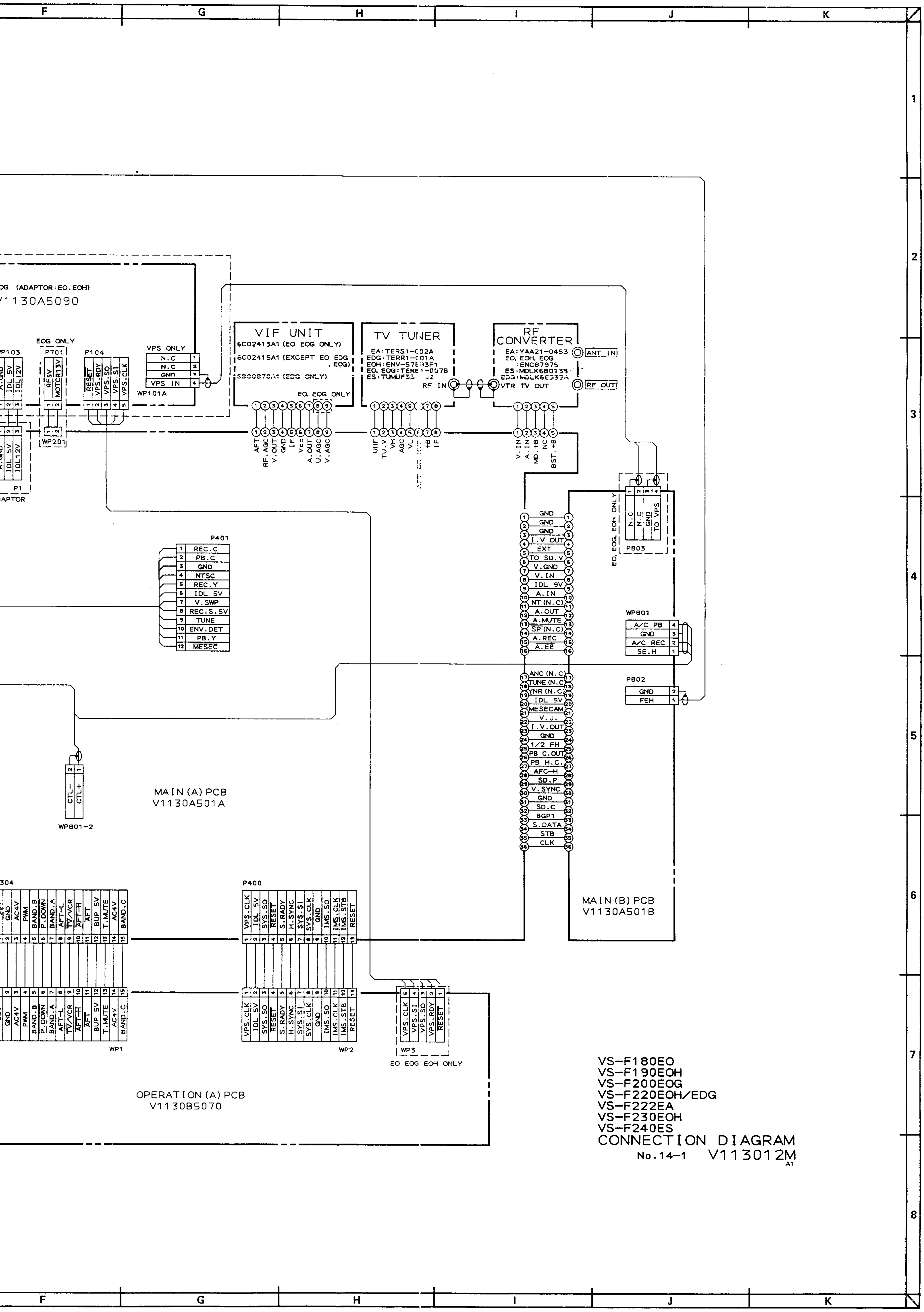
No.3-1 V113054M
A2

8
F
G
H
I
J
K

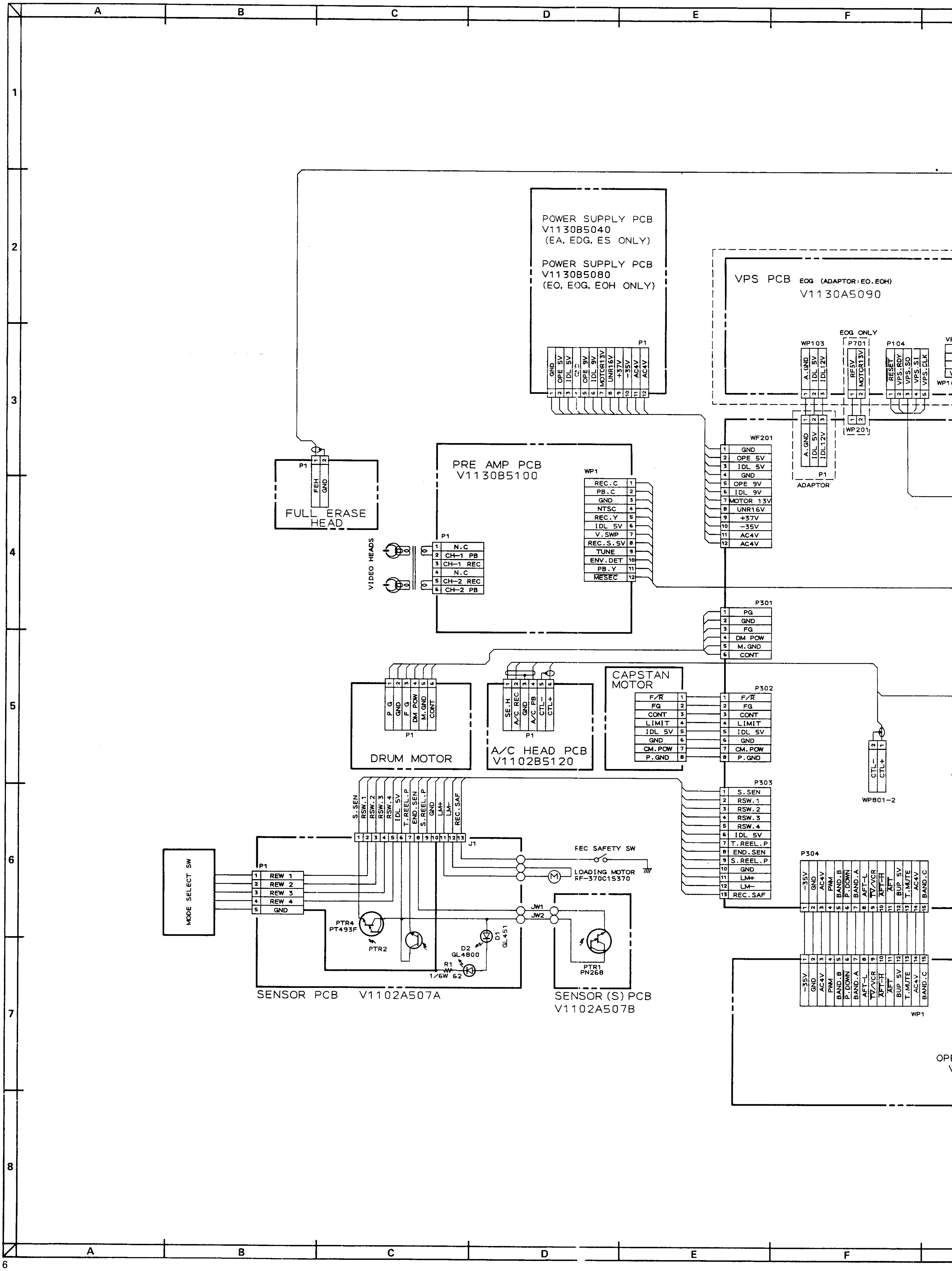

A
B
C
D
E
F
1
2
3
4
5
6
7
8
DM CONT OUT
M56732L
TSD
REG
CONTROL AMP
DM DRIVE AMP
RECTIFIER
MPX (1)
MPX (2)
H1
H2
FG
PG
DRUM MOTOR
P301
CONT
MOTOR−
MOTOR+
DM FG
GND
DM PG
P.GND
MOTOR13V
1Ω
DRUM MOTOR SPEED & PHASE CONTROL
TR302
TR205
CURRENT CONT
CTL+
CTL−
DRUM FG SIGNAL
DRUM PG SIGNAL
HY-101
VHG-411A
C4
0.047µ/50V
HW
HV
HU
LIM
GSENS
FC
GND
HW−
HW+
HV−
HV+
HU−
HU+
NC
U
V
W
BKIHB
CTL
FSR
REF
FG GND
FG OUT
FG IN+
FG IN−1
FG IN−2
VCC
VS
RF
NC
LB1807
C3
C2
C1
C1toC3
0.22µ/50V
R3
2.7Ω
C5
0.1µ
/25V
EZMP1440N
P302
FWD/REV
FG
CONT
LIMIT
VCC
GND
CM.POWER
P.GND
R1
R2
R1, 2
1.6Ω
M.GND
IDL5V
CAPSTAN MOTOR
CAPSTAN FG SIGNAL
IC303 1/2
BA15218N
CAPSTAN MOTOR SPEED & PHASE CONTROL
IC303 2/2
NFB
TR308
L:ON
:CAPSTAN MOTOR SPEED CONTROL LINE
:CAPSTAN MOTOR PHASE CONTROL LINE
:DRUM MOTOR SPEED CONTROL LINE
:DRUM MOTOR PHASE CONTROL LINE

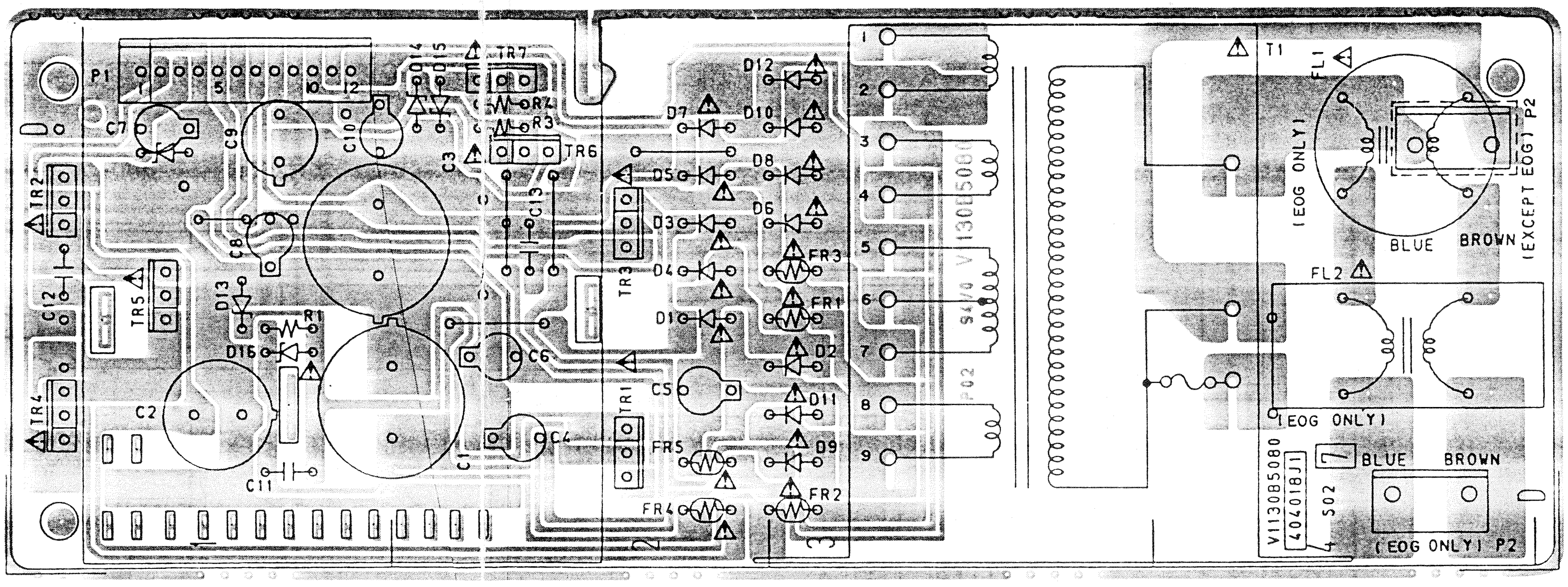

F
G
H
I
J
K
1
2
3
4
5
6
7
8
M CONT OUT
DM PG IN
CTL OUT
V.SYNC
REC CTL SIGNAL
DM FG IN
f=599.79Hz
DM SPEED
ERROR PULSE
DM PHASE
ERROR PULSE
VIDEO SWITCHING PULSE
CM PHASE
ERROR PULSE
CM SPEED
ERROR PULSE
CM CONT OUT
CM FG IN
MOTOR13V
TR205
CURRENT CONT
DRUM PG SIGNAL
TR301
FROM MAIN (B) PCB
VIDEO ENV.
FROM MAIN (A) PCB (1/3)
TO MAIN (A) PCB (1/3)
CHROMA ROTARY
(V.SWP WHEN TRICK MODE)
TO MAIN (A) PCB (1/3)
IC400 (41)
IC301
MN675121
V.SYNC
TRP
SD.P
DOC.P
ENV DET
ES
SS
PICT
D.V.Bb
N.C
ANC VOL
N.C
EXT
NTSC
SP
V.
C.ROT
AVbb
CO
AGC
CTLQ
CTLA
CTLH
CTLS
RCTLP
RCTLN
TPZ
CIF
CIR
VRI
VRO
AVss
FPG
YFG
AFG
FGF
FGI
MMGP
TUNE
A.EE
REC.S
A.REC
NP
YNR
REC.SAF
SRDY
SRP
RSW4
RSW3
RSW2
RSW1
LM.R
LM.F
TRQUP
SCK
S1
S0
RESET
V.SWP
VP
CPO
CFV
DPO
DFV
CM.LTH
CMSTOP
CMD
OSC2
OSC1
Vss
F/R
N.C
A.MUTE
PB
EE
PAL/MESECAM
TRICK
IDL5V
VR301
SWP ADJ
X301
TO PRE AMP PCB
D305
DM SPEED ERROR
LPF
DM PHASE ERROR
LPF
IC303 1/2
BA15218N
IC303 2/2
MOTOR PHASE
CM SPEED ERROR
LPF
CM PHASE ERROR
LPF
NFB
TR308
TR309
L:ON
L:ON
CMD
TR310
CM STOP:ON
MAIN (A) PCB

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES
SERVO
BLOCK DIAGRAM
No.3-3 V113056M A1


F
G
H
I
J
K
1
2
3
4
5
6
7
8
OG (ADAPTOR:EO.EOH)
V1130A5090
EOG ONLY
P103
P701
RF5V
MOTOR13V
P104
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
VPS ONLY
N.C
N.C
GND
VPS IN
WP101A
WP201
P1
ADAPTOR
A.GND
IDL 5V
IDL12V
VIF UNIT
6C02413A1 (EO EOG ONLY)
6C02415A1 (EXCEPT EO EOG , EOG)
6S00870A1 (EOG ONLY)
EO, EOG ONLY
AFT
RF.AGC
V.OUT
GND
IF
Vcc
A.OUT
U.AGC
V.AGC
TV TUNER
EA:TERS1-C02A
EDG:TERR1-C01A
EOH:ENV-57E13F1
EO, EOG:TERE1-007B
ES:TUMUF55
RF IN
UHF
TU.V
VH
AGC
VL
+B
IF
RF CONVERTER
EA:YAA21-0453
EO, EOH, EOG :ENC87975
ES:MDLK680139
EDG:MDLK6E533A
ANT IN
VTR TV OUT
RF OUT
V.IN
A.IN
MD.+B
NC
BST.+B
P803
EO, EOG, EOH ONLY
N.C
N.C
GND
TO VPS
GND
GND
GND
I.V OUT
EXT
TO SD.V
V.GND
V.IN
IDL 9V
A.IN
NT (N.C)
A.OUT
A.MUTE
SP (N.C)
A.REC
A.EE
ANC (N.C)
TUNE (N.C)
YNR (N.C)
IDL 5V
MESECAM
V.J.
I.V.OUT
GND
1/2 FH
PB C.OUT
PB H.C.
AFC-H
SD.P
V.SYNC
GND
SD.C
BGP1
S.DATA
STB
CLK
WP801
A/C PB
GND
A/C REC
SE.H
P802
GND
FEH
P401
REC.C
PB.C
GND
NTSC
REC.Y
IDL 5V
V.SWP
REC.S.5V
TUNE
ENV.DET
PB.Y
MESEC
MAIN (A) PCB
V1130A501A
CTL-
CTL+
WP801-2
MAIN (B) PCB
V1130A501B
P304
GND
AC4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC4V
BAND.C
WP1
P400
VPS.CLK
IDL 5V
SYS.SO
RESET
S.RADY
H.SYNC
SYS.SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
WP2
WP3
VPS.CLK
VPS.SI
VPS.SO
VPS.RDY
RESET
EO EOG EOH ONLY
OPERATION (A) PCB
V1130B5070

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES
CONNECTION DIAGRAM
No.14-1 V113012M A1

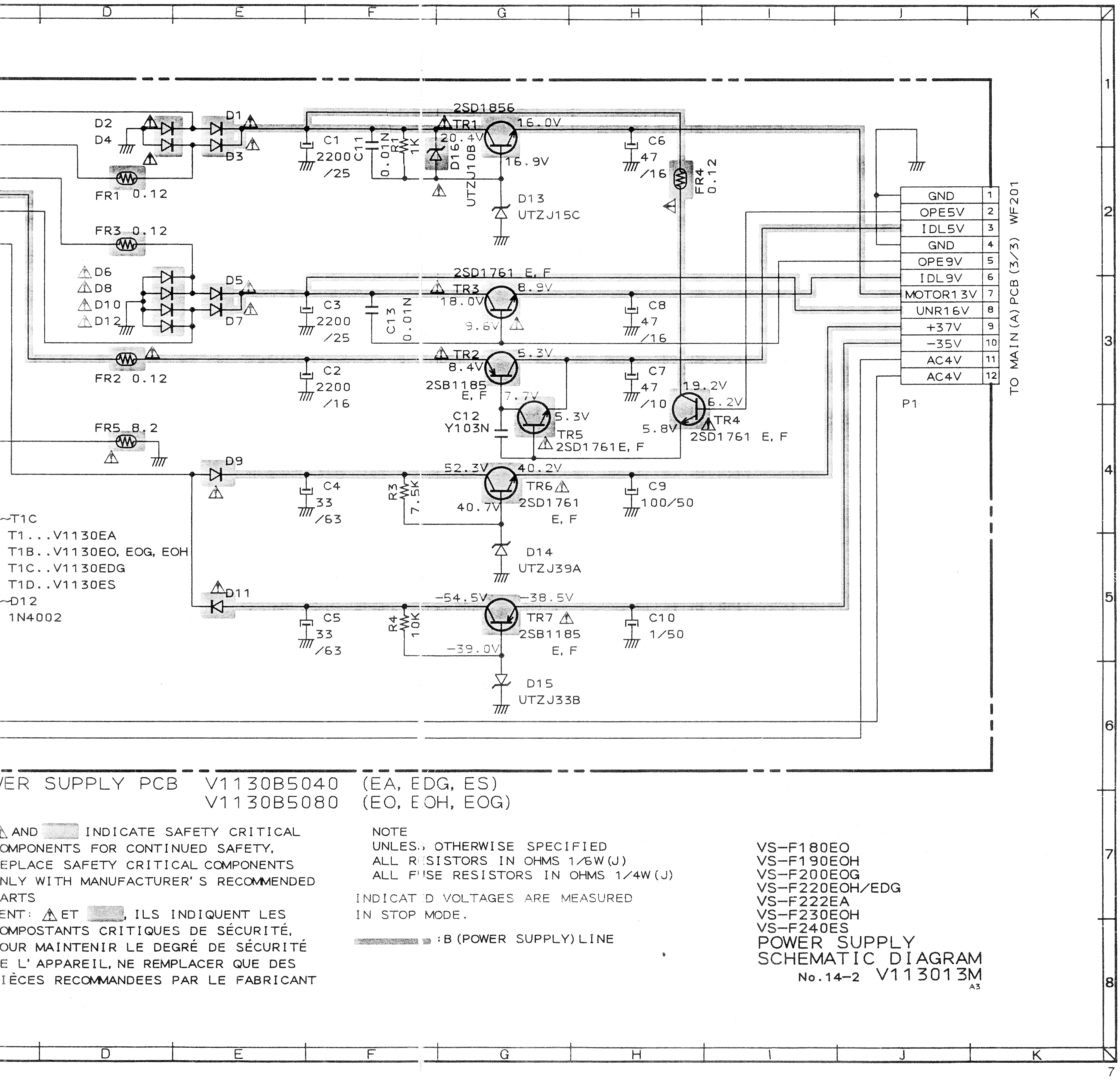

A
B
C
D
E
F
1
2
3
4
5
6
7
8
6
POWER SUPPLY PCB
V1130B5040
(EA, EDG, ES ONLY)
POWER SUPPLY PCB
V1130B5080
(EO, EOG, EOH ONLY)
P1
GND
OPE 5V
IDL 5V
OPE 9V
IDL 9V
MOTOR13V
UNR16V
+37V
-35V
AC4V
AC4V
VPS PCB EOG (ADAPTOR:EO.EOH)
V1130A5090
EOG ONLY
WP103
P701
P104
A.GND
IDL 5V
IDL12V
RF5V
MOTOR13V
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP201
P1
ADAPTOR
WF201
GND
OPE 5V
IDL 5V
GND
OPE 9V
IDL 9V
MOTOR 13V
UNR16V
+37V
-35V
AC4V
AC4V
PRE AMP PCB
V1130B5100
WP1
REC.C
PB.C
GND
NTSC
REC.Y
IDL 5V
V.SWP
REC.S.5V
TUNE
ENV.DET
PB.Y
MESEC
FULL ERASE HEAD
P1
FEH
GND
VIDEO HEADS
N.C
CH-1 PB
CH-1 REC
N.C
CH-2 REC
CH-2 PB
P301
PG
GND
FG
DM POW
M.GND
CONT
DRUM MOTOR
P G
GND
F G
DM POW
M.GND
CONT
A/C HEAD PCB
V1102B5120
SE.H
A/C REC
GND
A/C PB
CTL-
CTL+
CAPSTAN MOTOR
P302
F/R
FG
CONT
LIMIT
IDL 5V
GND
CM.POW
P.GND
WP801-2
CTL-
CTL+
P303
S.SEN
RSW.1
RSW.2
RSW.3
RSW.4
IDL 5V
T.REEL.P
END.SEN
S.REEL.P
GND
LM+
LM-
REC.SAF
J1
FEC SAFETY SW
LOADING MOTOR
RF-370C15370
MODE SELECT SW
REW 1
REW 2
REW 3
REW 4
GND
JW1
JW2
PTR4
PT493F
PTR2
D2
GL4800
D1
GL451
R1
1/6W 62
PTR1
PN268
SENSOR PCB V1102A507A
SENSOR (S) PCB
V1102A507B
P304
-35V
GND
AC4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC4V
BAND.C
WP1
OP


P1
TR7
TR6
TR2
TR5
TR4
TR3
TR1
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
R1
R2
R3
FR1
FR2
FR3
FR4
FR5
T1
FL1
FL2
BLUE
BROWN
(EOG ONLY)
(EXCEPT EOG)
P2
(EOG ONLY) P2
S02
V1130B5080
4040180J1
PO2

POWER SUPPLY PCB VII30B5080JI
(EO,EOH,EOG ONLY)

CONTINUED SAFETY,
TH MANUFACTURER'S

DE SÉCURITÉ.
PAREIL,
PAR LE FABRICANT


D E F G H I J K
1 2 3 4 5 6 7 8
D2
D4
D1
D3
FR1 0.12
FR3 0.12
D6
D8
D10
D12
D5
D7
FR2 0.12
FR5 8.2
D9
D11
~T1C
T1...V1130EA
T1B..V1130EO, EOG, EOH
T1C..V1130EDG
T1D..V1130ES
~D12
1N4002
C1 2200 /25
C11 0.01N
R1 1K
2SD1856
TR1
20.4V
16.0V
16.9V
D16
UTZJ10B
D13
UTZJ15C
C6 47 /16
FR4 0.12
C3 2200 /25
C13 0.01N
2SD1761 E, F
TR3
18.0V
8.9V
9.6V
C8 47 /16
C2 2200 /16
TR2
8.4V
5.3V
2SB1185 E, F
7.7V
C12 Y103N
TR5
5.3V
2SD1761E, F
C7 47 /10
19.2V
6.2V
5.8V
TR4
2SD1761 E, F
C4 33 /63
R3 7.5K
52.3V
40.2V
40.7V
TR6
2SD1761 E, F
D14
UTZJ39A
C9 100/50
C5 33 /63
R4 10K
-54.5V
-38.5V
-39.0V
TR7
2SB1185 E, F
D15
UTZJ33B
C10 1/50
GND 1
OPE5V 2
IDL5V 3
GND 4
OPE9V 5
IDL9V 6
MOTOR13V 7
UNR16V 8
+37V 9
-35V 10
AC4V 11
AC4V 12
P1
TO MAIN (A) PCB (3/3) WF201
A3

ER SUPPLY PCB V1130B5040 (EA, EDG, ES)
V1130B5080 (EO, EOH, EOG)

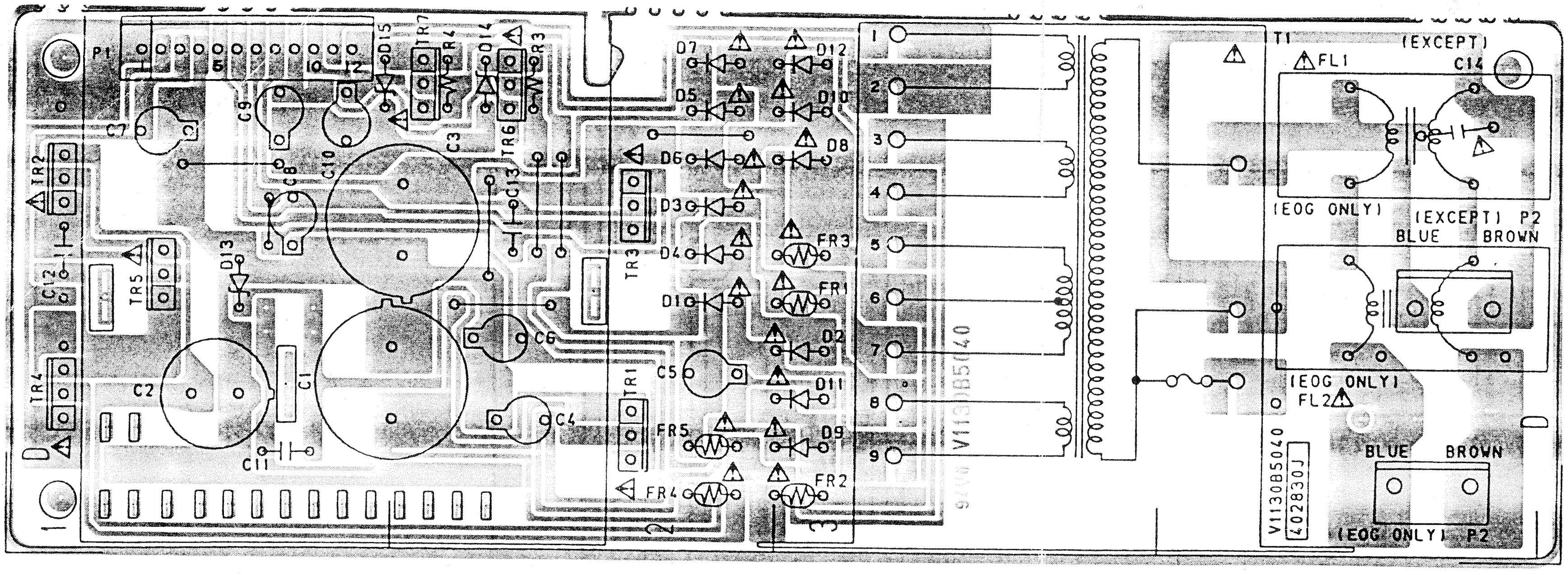
⚠ AND ▨ INDICATE SAFETY CRITICAL
OMPONENTS FOR CONTINUED SAFETY,
EPLACE SAFETY CRITICAL COMPONENTS
NLY WITH MANUFACTURER' S RECOMMENDED
ARTS
ENT: ⚠ ET ▨, ILS INDIQUENT LES
OMPOSTANTS CRITIQUES DE SÉCURITÉ,
OUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
E L' APPAREIL, NE REMPLACER QUE DES
IÈCES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL FUSE RESISTORS IN OHMS 1/4W(J)

INDICATED VOLTAGES ARE MEASURED
IN STOP MODE.

▨ : B (POWER SUPPLY) LINE

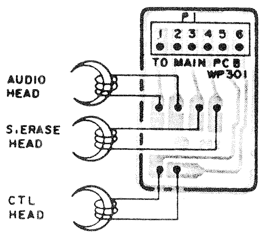
VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES
POWER SUPPLY
SCHEMATIC DIAGRAM
No.14-2 V113013M


P1
TR2
TR5
TR4
C2
C1
C7
C9
C10
C8
C3
C11
C12
D13
D15
TR7
R4
D14
R3
TR6
C13
C6
C5
C4
TR3
TR1
D7
D5
D12
D10
D6
D8
D3
D4
D1
D11
D2
D9
FR3
FR1
FR5
FR4
FR2
1
2
3
4
5
6
7
8
9
V113OB5040
T1
FL1
C14
(EXCEPT)
(EOG ONLY)
(EXCEPT) P2
BLUE
BROWN
(EOG ONLY)
FL2
V1130B5040
402830J
(EOG ONLY) P2

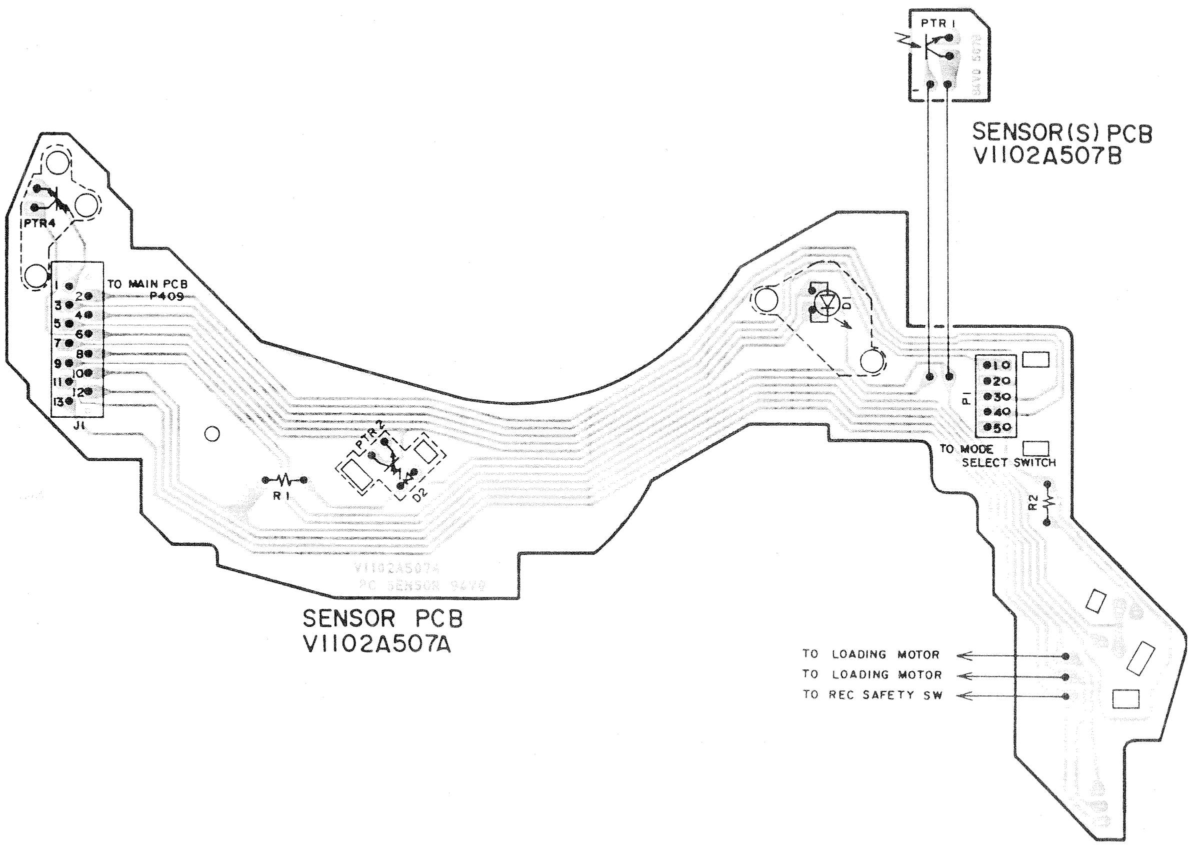
POWER SUPPLY PCB V113CB5040
(EDG.ES.EA ONLY)

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED S
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACT
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL.
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRIC

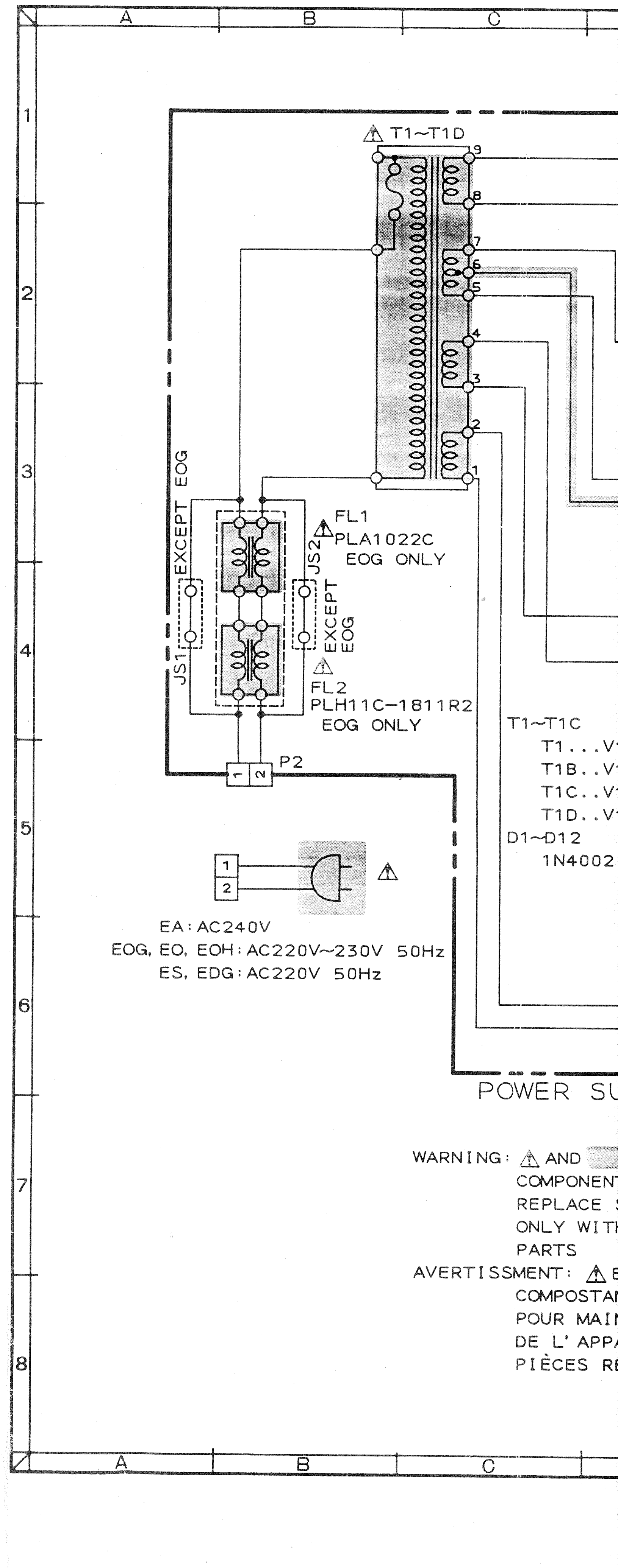

P1
1 2 3 4 5 6
TO MAIN PCB
WP301
AUDIO HEAD
S.ERASE HEAD
CTL HEAD

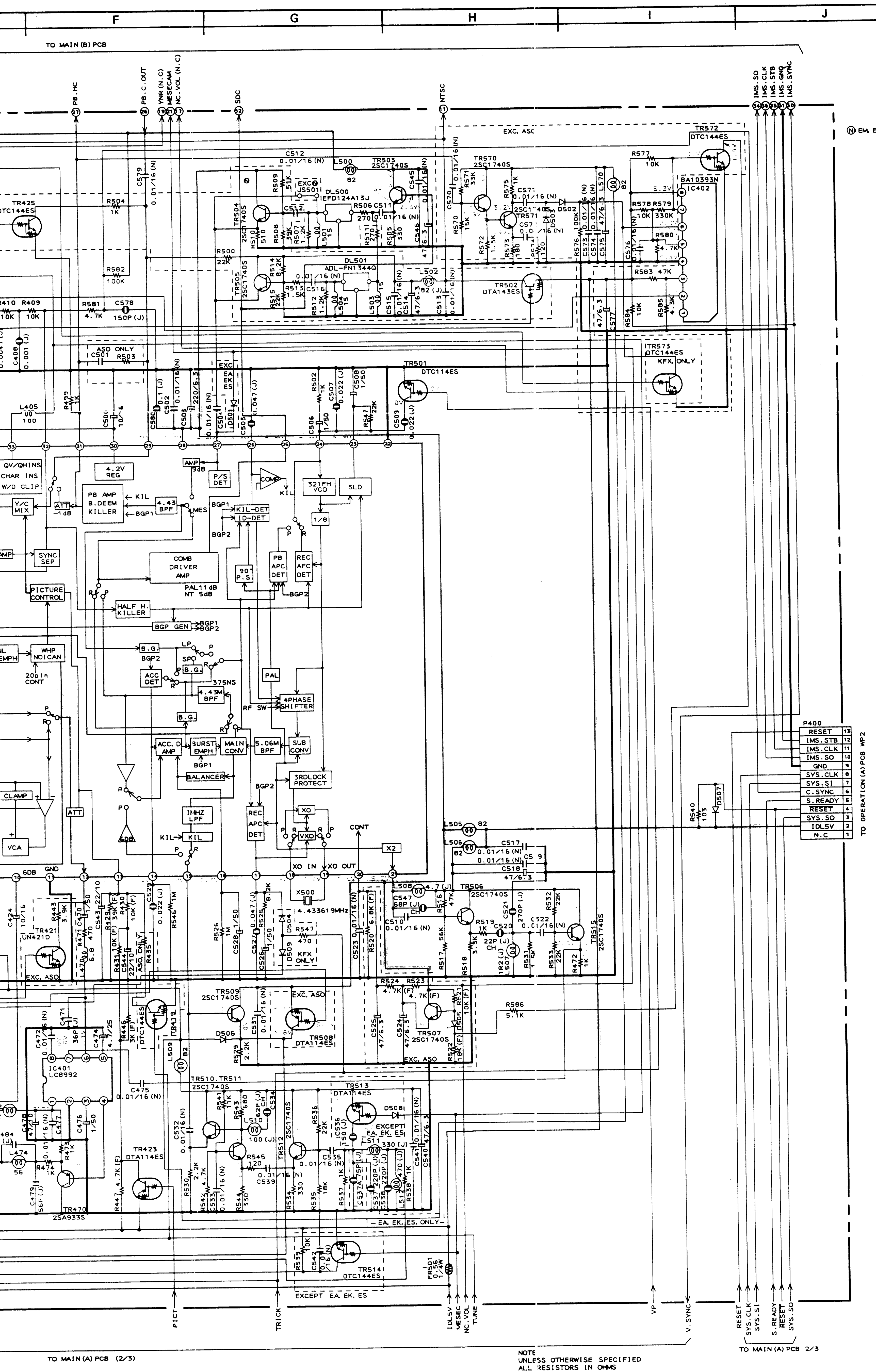
A/C HEAD PCB
V1102B5120J1


PTR1
PTR4
TO MAIN PCB
P409
J1
R1
PTR2
D2
D1
P1
TO MODE SELECT SWITCH
R2
TO LOADING MOTOR
TO LOADING MOTOR
TO REC SAFETY SW

SENSOR(S) PCB
V1102A507B

SENSOR PCB
V1102A507A


A
B
C
1
2
3
4
5
6
7
8
T1~T1D
1
2
3
4
5
6
7
8
9
EXCEPT EOG
FL1
PLA1022C
EOG ONLY
JS2
JS1
EXCEPT EOG
FL2
PLH11C-1811R2
EOG ONLY
P2
1
2
T1~T1C
T1...V
T1B..V
T1C..V
T1D..V
D1~D12
1N4002
EA:AC240V
EOG, EO, EOH:AC220V~230V 50Hz
ES, EDG:AC220V 50Hz
POWER SU
WARNING: ⚠ AND
COMPONENT
REPLACE S
ONLY WIT
PARTS
AVERTISSMENT: ⚠
COMPOSTAN
POUR MAIN
DE L' APPA
PIÈCES RE


TO MAIN (B) PCB
TO MAIN (A) PCB (2/3)
TO MAIN (A) PCB 2/3
PB.HC
PB.C.OUT
YNR (N.C)
MESECAM
NC.VOL (N.C)
SDC
NTSC
IMS.SO
IMS.CLK
IMS.STB
IMS.GND
IMS.SYNC
Ⓝ EM, ES, 430EOH, ONLY
EXC. ASC
TR572 DTC144ES
IC402 BA10393N
ITR573 DTC144ES KFX. ONLY
TR501 DTC114ES
TR502 DTA143ES
TR503 2SC1740S
TR504 2SC1740S
TR505 2SC1740S
TR570 2SC1740S
TR571 2SC1740S
TR425 DTC144ES
DL500 IEFD124A13J
DL501 ADL-FN1344Q
ASO ONLY
QV/QHINS CHAR INS W/D CLIP
4.2V REG
AMP 9dB
P/S DET
COMP
321FH VCO
SLD
Y/C MIX
ATT -1dB
PB AMP B.DEEM KILLER
4.43 BPF
MES
KIL-DET
ID-DET
1/8
SYNC SEP
COMB DRIVER AMP
PAL11dB NT 5dB
90° P.S
PB APC DET
REC AFC DET
PICTURE CONTROL
HALF H. KILLER
BGP GEN
BGP1
BGP2
WHP NOICAN
20pin CONT
B.G.
ACC DET
375NS
4.43M BPF
PAL
RF SW
4PHASE SHIFTER
ACC. D AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RDLOCK PROTECT
REC APC DET
CLAMP
ATT
1MHZ LPF
KIL
6DB
VCA
XO
VXO
CONT
X2
XO IN
XO OUT
X500 4.433619MHz
KFX ONLY
IC401 LC8992
TR421 UN421D
TR423 DTA114ES
TR470 2SA933S
TR506 2SC1740S
TR507 2SC1740S
TR508 DTA114ES
TR509 2SC1740S
TR510, TR511 2SC1740S
TR512
TR513 DTA114ES
TR514 DTC144ES
TR515 2SC1740S
TR419 DTC144ES
EXC. ASO
EXCEPT EA, EK, ES
EA, EK, ES ONLY
FR501 0.56 1/4W
P400
RESET
IMS.STB
IMS.CLK
IMS.SO
GND
SYS.CLK
SYS.SI
C.SYNC
S.READY
RESET
SYS.SO
IDL5V
N.C
TO OPERATION (A) PCB WP2
R540 103
D507
PICT
TRICK
IDL5V
MESEC
NC.VOL
TUNE
VP
V.SYNC
RESET
SYS.CLK
SYS.SI
S.READY
RESET
SYS.SO

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN
ALL INDUCTORS IN µH(K)
ALL DIODES ARE 1SS131T

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

:B (POWER SUPPLY) LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE
:REC Y SIGNAL LINE
:PB Y SIGNAL LINE

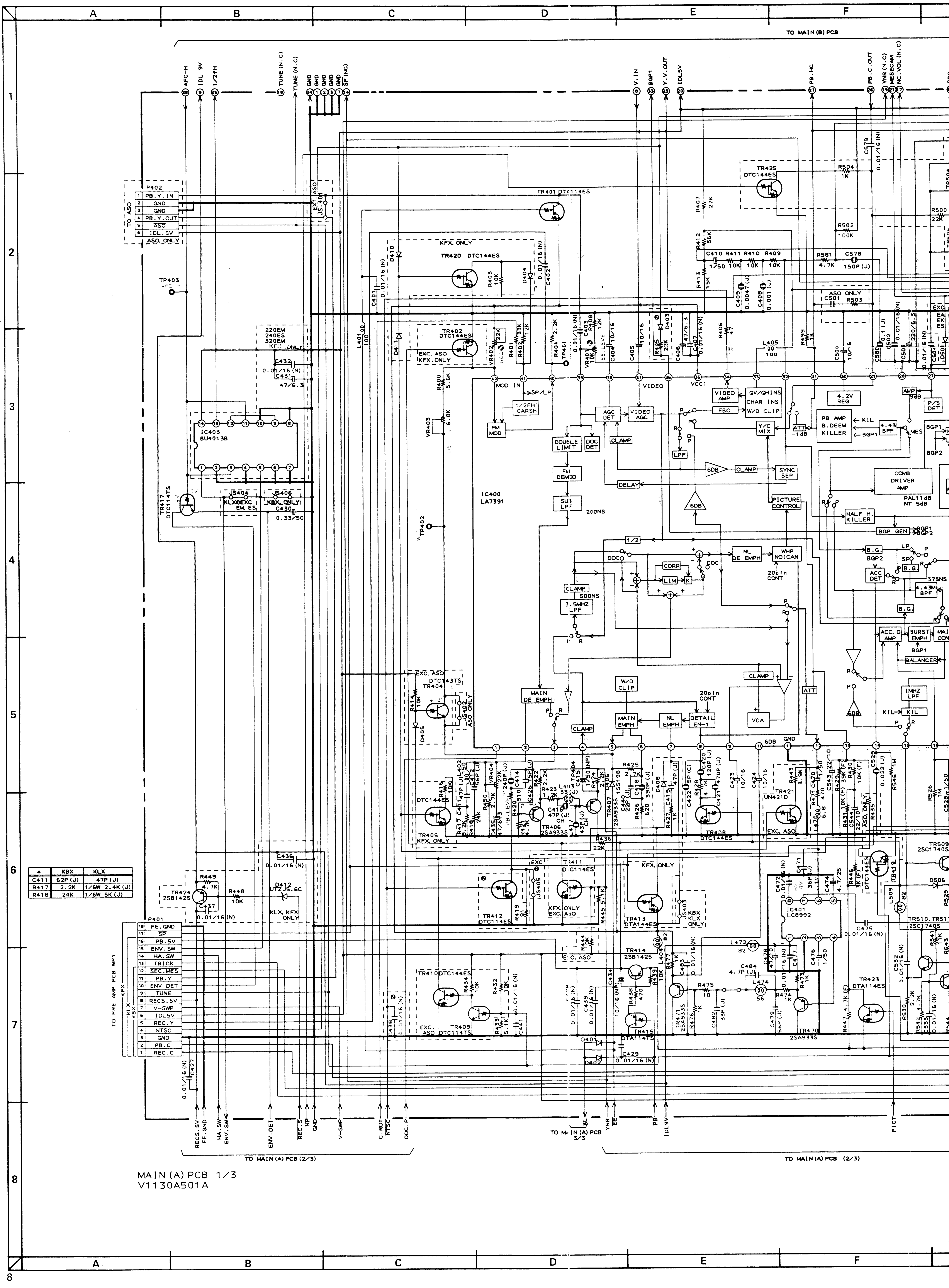
WARNING: AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ET , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES

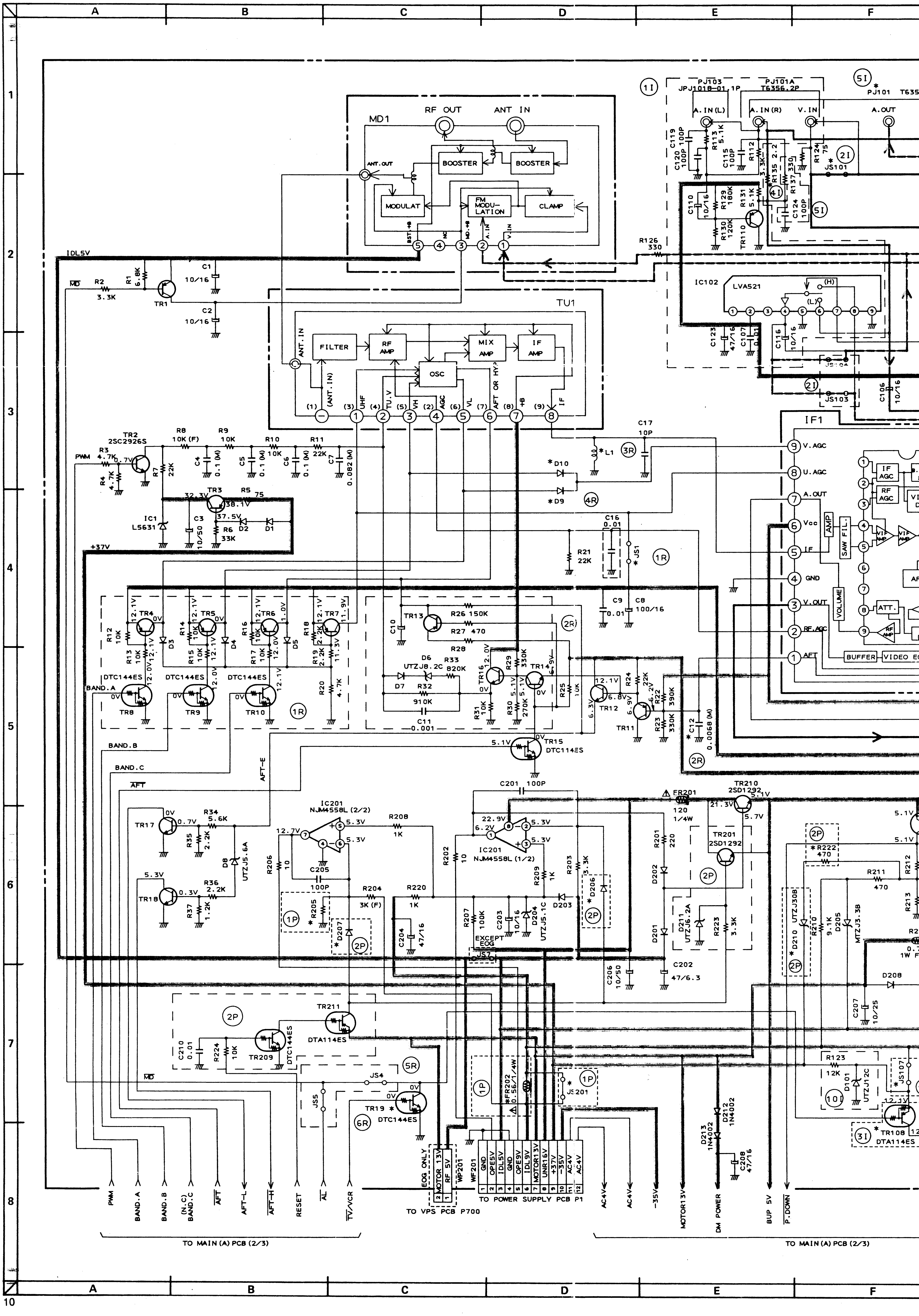
MAIN (A) (1/3)
SCHEMATIC DIAGRAM

No.14-3 V113014M
A1

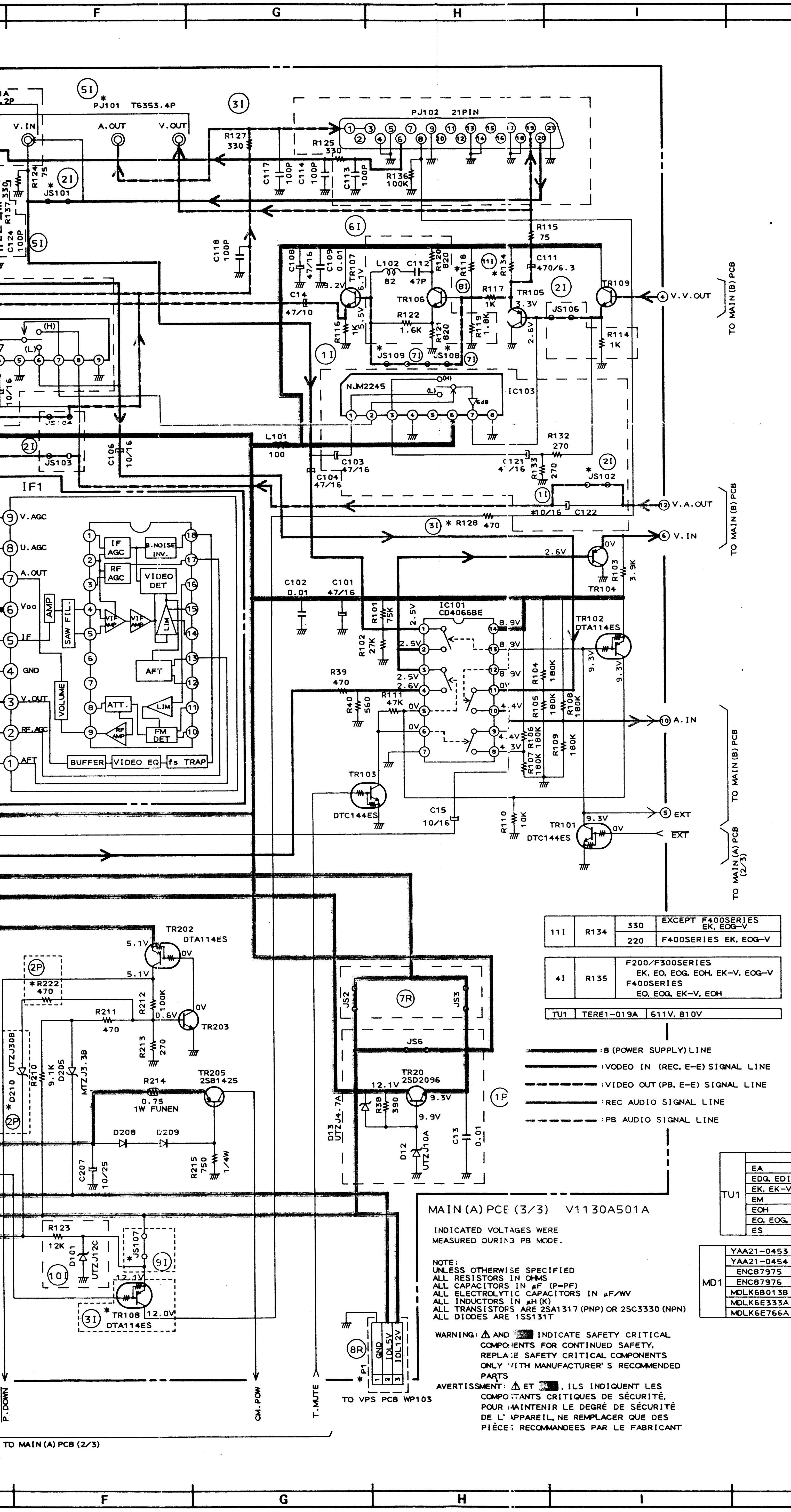

A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO MAIN (B) PCB
AFC-H
IDL 9V
1/2FH
TUNE (N.C)
TUNE (N.C)
GND
SP (NC)
V.IN
BGP1
Y.V.OUT
IDL.5V
PB.HC
PB.C.OUT
YNR (N.C)
MESECAM
NC.VOL (N.C)
TO ASO
P402
PB.Y.IN
GND
PB.Y.OUT
ASO
IDL.5V
ASO ONLY
EXT. ASO
TP403
TR401 DTA114ES
TR420 DTC144ES
KFX ONLY
TR402 DTC144ES
EXC. ASO KFX ONLY
TR425 DTC144ES
IC403 BU4013B
TR417 DTC114TS
JS404 KLX@EXC EM, ES
JS406 KBX ONLY
IC400 LA7391
TP401
TP402
VR401
VR402
VR403
MOD IN
SP/LP
1/2FH CARSH
FM MOD
AGC DET
VIDEO AGC
VIDEO
VCC1
VIDEO AMP
QV/QHINS CHAR INS
FBC
W/D CLIP
Y/C MIX
ATT -1dB
4.2V REG
PB AMP B.DEEM KILLER
4.43 BPF
MES
P/S DET
9dB AMP
DOUBLE LIMIT
DOC DET
CLAMP
FM DEMOD
SUB LPF
200NS
LPF
6DB
SYNC SEP
DELAY
PICTURE CONTROL
COMB DRIVER AMP
PAL11dB NT 5dB
HALF H. KILLER
BGP GEN
BGP1
BGP2
1/2
NL DE EMPH
WHP NOICAN
20p1n CONT
CORR
LIM
DOC
B.G.
ACC DET
375NS
4.43M BPF
3.5MHZ LPF
500NS
ACC. D AMP
BURST EMPH
BALANCER
W/D CLIP
MAIN DE EMPH
MAIN EMPH
NL EMPH
DETAIL EN-1
VCA
1MHZ LPF
KIL
TR404 DTC143TS
EXC. ASO
JS402 ASO ONLY
TR405 DTC144ES
KFX ONLY
TR406 2SA933S
TR407 2SA933S
TR408 DTC144ES
TR421 UN421D
TR419 DTC144ES
TR509 2SC1740S
TR510
2SC1740S
IC401 LC8992
TR424 2SB1425
D412 UTZJS.6C
KLX, KFX ONLY
P401
FE.GND
SP
PB.5V
ENV.SW
HA.SW
TRICK
SEC.MES
PB.Y
ENV.DET
TUNE
RECS.5V
V-SWP
IDL5V
REC.Y
NTSC
GND
PB.C
REC.C
TO PRE AMP PCB WP1
KFX
KBX
KLX
TR412 DTC114ES
TR411 DTC114ES
EXC. ASO
KFX ONLY
TR413 DTA144ES
JS403 KBX KLX ONLY
TR414 2SB1425
TR410 DTC144ES
TR409 DTC114TS
TR415 DTA114TS
TR471 2SA933S
TR470 2SA933S
TR423 DTA114ES
RECS.5V
FE.GND
HA.SW
ENV.SW
ENV.DET
REC.S
NP
GND
V-SWP
C.ROT
NTSC
DOC.P
YNR
EE
PB
IDL9V
PICT
TO MAIN (A) PCB 3/3
TO MAIN (A) PCB (2/3)
TO MAIN (A) PCB (2/3)

*	KBX	KLX
C411	62P (J)	47P (J)
R417	2.2K	1/6W 2.4K (J)
R418	24K	1/6W 5K (J)

MAIN (A) PCB 1/3
V1130A501A



A
B
C
D
E
F
1
2
3
4
5
6
7
8
MD1
RF OUT
ANT IN
ANT.OUT
BOOSTER
BOOSTER
MODULAT
FM MODU-LATION
CLAMP
BST.+B
NC
MD.+B
A.IN
V.IN
IDL5V
MD
R2 3.3K
R1 6.8K
TR1
C1 10/16
C2 10/16
TU1
ANT.IN
FILTER
RF AMP
MIX AMP
IF AMP
OSC
(ANT.IN)
UHF
TU.V
VH
AGC
VL
AFT OR HY?
+B
IF
TR2 2SC2926S
PWM
R3 4.7K
R4 4.7K
R7 22K
R8 10K (F)
R9 10K
R10 10K
R11 22K
C4 0.1 (M)
C5 0.1 (M)
C6 0.1 (M)
C7 0.082 (M)
TR3
R5 75
32.3V
38.1V
37.5V
IC1 L5631
C3 10/50
R6 33K
D2
D1
+37V
TR4
TR5
TR6
TR7
R12 10K
R13 10K
R14 10K
R15 10K
R16 10K
R17 10K
R18 2.2K
R19 2.2K
R20 4.7K
D3
D4
D5
DTC144ES
BAND.A
TR8
TR9
TR10
BAND.B
BAND.C
AFT
AFT-E
C10
TR13
R26 150K
R27 470
R28
D6 UTZJ8.2C
R33 820K
D7
R32 910K
C11 0.001
TR16
R29 330K
TR14
R30 270K
R31 10K
R25 10K
R24 22K
R22 390K
R23 330K
TR12
TR11
C12 0.0068 (M)
TR15 DTC114ES
C17 10P
L1
D10
D9
C16 0.01
JS1
R21 22K
C9 0.01
C8 100/16
TR17
TR18
R34 5.6K
R35 2.2K
R36 2.2K
R37 1.2K
D8 UTZJ5.6A
IC201 NJM4558L (2/2)
IC201 NJM4558L (1/2)
R208 1K
R206 10
C205 100P
R205
D207
R204 3K (F)
R220 1K
C204 47/16
C201 100P
R202 10
R207 100K
C203 10/16
D204 UTZJ5.1C
R209 1K
R203 3.3K
D206
D203
EXCEPT EOG
JS7
C206 10/50
FR201 120 1/4W
TR210 2SD1292
TR201 2SD1292
R201 220
D202
D201
D211 UTZJ6.2A
R223 3.3K
C202 47/6.3
C210 0.01
R224 10K
TR209 DTC144ES
TR211 DTA114ES
JS4
JS5
TR19 DTC144ES
FR202 0.56/1/4W
JS201
D213 1N4002
D212 1N4002
C208 47/16
EOG ONLY
WF201
MOTOR 13V
RF 5V
TO VPS PCB P700
GND
OPE5V
IDL5V
GND
OPE9V
IDL9V
MOTOR13V
UNR16V
+37V
-35V
AC4V
AC4V
TO POWER SUPPLY PCB P1
PWM
BAND.A
BAND.B
(N.C) BAND.C
AFT
AFT-L
AFT-H
RESET
AL
TV/VCR
AC4V
AC4V
-35V
MOTOR13V
DM POWER
BUP 5V
P.DOWN
TO MAIN (A) PCB (2/3)
TO MAIN (A) PCB (2/3)
PJ103 JPJ1018-01.1P
PJ101A T6356.2P
PJ101 T635
A.IN(L)
A.IN(R)
V.IN
A.OUT
C119 100P
C120 100P
R113 5.1K
C115 100P
R112 3.3K
R135 2.2
R137 330
R124 75
JS101
C110 10/16
R129 180K
R131 5.1K
R130 120K
TR110
C124 100P
R126 330
IC102 LVA521
C123 47/16
C107 0.01
C116 10/16
JS104
JS103
C106 10/16
IF1
V.AGC
U.AGC
A.OUT
Vcc
IF
GND
V.OUT
RF.AGC
AFT
IF AGC
RF AGC
AMP
SAW FIL.
VOLUME
ATT.
RF AMP
BUFFER
VIDEO EQ
R222 470
R211 470
R212
R213
D210 UTZJ30B
R210 9.1K
D205 MTZJ3.3B
D208
C207 10/25
1W F
R123 12K
D101 UTZJ12C
JS107
TR108 DTA114ES


F
G
H
I
J
K
PJ101 T6353.4P
V.IN
A.OUT
V.OUT
PJ102 21PIN
R127 330
R125 330
R124 75
JS101
R137 330
C124 100P
C117 100P
C114 100P
C113 100P
R136 100K
C118 100P
R115 75
C108 47/16
C109 0.01
TR107
L102 82
C112 47P
R120 820
R118
R134
C111 470/6.3
TR109
C14 47/10
TR106
R117 1K
TR105
JS106
V.V.OUT
R116 1K
R122 1.6K
R121 820
R119 1.8K
R114 1K
JS109
JS108
TO MAIN (B) PCB
NJM2245
IC103
L101 100
R132 270
C103 47/16
C121 4'/16
R133 270
JS102
C104 47/16
C106 10/16
JS103
C122
V.A.OUT
IF1
V.AGC
U.AGC
A.OUT
Vcc
IF
GND
V.OUT
RF.AGC
AFT
IF AGC
B.NOISE INV.
RF AGC
VIDEO DET
SAW FIL.
AMP
VIF AMP
LIM
AFT
VOLUME
ATT.
LIM
RF AMP
FM DET
BUFFER
VIDEO EQ
fs TRAP
R128 470
V.IN
TR104
R103 3.9K
C102 0.01
C101 47/16
IC101 CD4066BE
R101 75K
R102 27K
TR102 DTA114ES
R104 180K
R105 180K
R108 180K
R39 470
R40 560
R111 47K
A.IN
R106 180K
R107 180K
R109 180K
TR103 DTC144ES
C15 10/16
R110 10K
TR101 DTC144ES
EXT
TO MAIN (A) PCB (2/3)
TR202 DTA114ES
R222 470
R212 100K
R211 470
TR203
R213 270
UTZJ30B
D210
R210 9.1K
D205 MTZJ3.3B
R214 0.75 1W FUNEN
TR205 2SB1425
D208
D209
C207 10/25
R215 750 1/4W
JS2
JS3
JS6
TR20 2SD2096
D13 UTZJ4.7A
R38 390
D12 UTZJ10A
C13 0.01
R123 12K
D101 UTZJ12C
JS107
TR108 DTA114ES
P1
GND
IDL5V
IDL12V
TO VPS PCB WP103
P.DOWN
CM.POW
T.MUTE
TO MAIN (A) PCB (2/3)

11I	R134	330	EXCEPT F400SERIES EK, EOG–V
		220	F400SERIES EK, EOG–V

4I	R135	F200/F300SERIES EK, EO, EOG, EOH, EK–V, EOG–V F400SERIES EO, EOG, EK–V, EOH

TU1	TERE1–019A	611V, 810V

:B (POWER SUPPLY) LINE
:VODEO IN (REC, E–E) SIGNAL LINE
:VIDEO OUT (PB, E–E) SIGNAL LINE
:REC AUDIO SIGNAL LINE
:PB AUDIO SIGNAL LINE

MAIN (A) PCE (3/3) V1130A501A

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)
ALL TRANSISTORS ARE 2SA1317 (PNP) OR 2SC3330 (NPN)
ALL DIODES ARE 1SS131T

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

1R	TR4, TR5, TR7	2SA1317	EXCEPT EK, EK–V
	TR8, TR9	DTC144ES	
	R12, R13, R14, R15	10K	
	R18, R19	2.2K	
	R20	4.7K	
	D3, D4	1SS131T	
	TR6	2SA1317	EOH ONLY
	TR10	DTC144ES	
	R16, R17	10K	
	D5	1SS131T	
	JS1		EK, EK–V

2R	TR13	2SA1317	EXCEPT EOH
	R26	150K	
	R27	470	
	C10	1/50	EK, EK–V, EOG, EOG–V EO, EM, F200SERIES–ES
		2.2/50	EA, EDG, EDI F400SERIES–ES
	R28	910	EO, EOG, EOG–V, EK–V
		560	EA, EM, ES, EK, EDG, EDI
	TR14, TR16	2SC3330	EOH ONLY
	R29	330K	
	R30	270K	
	R31	10K	
	R32	910K	
	R33	820K	
	C11	0.001	
	C12	0.0068 (M)	
	D7	1SS131T	
	D6	UTZJ8.2C	

3R	L1	1.0	EA
		0.82	F400SERIES–EOH
		0.68	EK, EK–V, EM
		0.47	EM, 611N
		なし	KBX–EOH, KLX–EOH, EDG, EDI, ES 611V, 810V

4R	D9, D10	1SS131T	EO, EOG, EOG–V

5R	JS4	EA, EM
	JS5	EXCEPT EA, EM

7R	JS2	EXCEPT EK–V
	JS3	EK–V ONLY

6R	TR19	DTC144ES	EXCEPT ES, EDG, EDI

8R	P1	PH 3P	EO, EOH, EOG, EOG–V, EK–V

1P	R205	2.4K (F)	EO, EOH, EOG, EOG–V, EK–V
		4.3K (F)	EA, EM, ES, EK, EDG, EDI
	TR20	2SD2096	EO, EOH, EOG, EOG–V, EK–V
	D12	UTZJ10A	
	R38	390	
	C13	0.01	FR202
	JS6	JS201	EA, EM, ES, EK, EDG, EDI

2P	R222	470	EOG, EOG–V ONLY
	R223	3.3K	
	R224	10K	
	D206, D207	1SS131T	
	D210	UTZJ30B	
	D211	UTZJ6.2A	
	TR201	2SD1292	
	TR209	DTC144ES	
	TR211	DTA114ES	
	C210	0.01	

1I	TR110	C121	R138
	IC102	C122	R139
	IC103	C123	F400SERIES EK, EOG–V
	C103	R112	
	C105	R113	
	C107	R129	
	C110	R130	
	C115	R131	
	C116	R132	
	C119	R133	
	C120	PJ101A	PJ103

2I	JS101	JS104	EXCEPT F400SERIES EK, EOG–V
	JS102	JS106	
	JS103	R114	

3I	PJ102	R125	EK, EO, EOG EK–V, EOG–V EOH
	C113	R128	
	C114	R136	
	TR108		

5I	PJ101	R137	EA, EDG, EM ES, EDI
	C124		

6I	C112	R122	611N, 611VPS 810N, 810VPS SAL 810Y
	R119	L102	
	R120	TR106	
	R121		

7I	JS108	JS109	EXCEPT 6I

8I	R118	2.7K	6I
		1K	EXCEPT 6I

9I	JS107	EO, EOG, EOG–V, EOH, EK–V

10I	D101	R123	EK 611, 810V

		F200SERIES	F300SERES	F400SERIES
TU1	EA	TERS1–002A	←	←
	EDG, EDI	TERR1–001A	←	←
	EK, EK–V	TERB1–008A	←	←
	EM	VTSB6CZ	←	←
	EOH	ENV–57883F1	←	TERE3–001B
	EO, EOG, EOG–V	TERE1–007B	←	←
	ES	TUMUF3S–292	TERZ1–004A	←

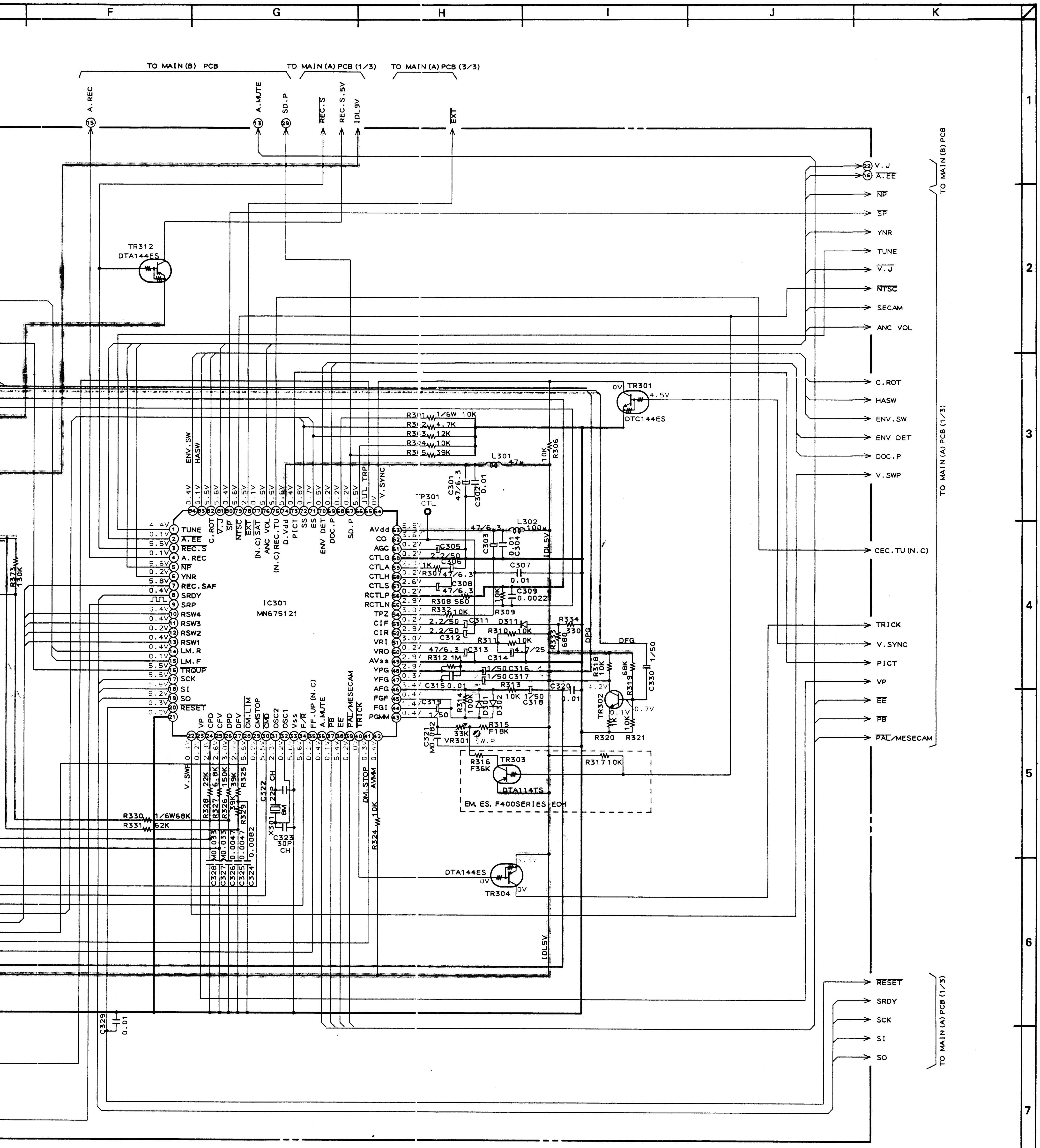
MD1	YAA21–0453	EA
	YAA21–0454	EM
	ENC87975	EO, EOG, EOG–V, EOH
	ENC87976	EK, EK–V, 611, 810V
	MDLK6B013B	ES
	MDLK6E333A	EDG
	MDLK6E766A	EDI

IF1	KX EA	EA
	KX EDG	EDG
	KX EK	EK, EK–V
	KX EM	EM
	KX EOH	EOH, 611N
	KX EOG	EO, EOG, EOG–V
	KX ES	ES
	KX EDI	EDI

VS–F180EO
VS–F190EOH
VS–F200EOG
VS–F220EOH/EDG
VS–F222EA
VS–F230EOH
VS–F240ES

MAIN (A) (3/3) SCHEMATIC DIAGRAM

No.14–5 V113016M A1


F
G
H
I
J
K
1
2
3
4
5
6
7
TO MAIN (B) PCB
TO MAIN (A) PCB (1/3)
TO MAIN (A) PCB (3/3)
A.REC
A.MUTE
SD.P
REC.S
REC.S.5V
IDL9V
EXT
V.J
A.EE
NP
SP
YNR
TUNE
V.J
NTSC
SECAM
ANC VOL
C.ROT
HASW
ENV.SW
ENV DET
DOC.P
V.SWP
CEC.TU (N.C)
TRICK
V.SYNC
PICT
VP
EE
PB
PAL/MESECAM
RESET
SRDY
SCK
SI
SO
TO MAIN (B) PCB
TO MAIN (A) PCB (1/3)
TO MAIN (A) PCB (1/3)
TR312
DTA144ES
TR301
DTC144ES
TR302
TR303
DTA114TS
TR304
DTA144ES
IC301
MN675121
TP301
CTL
L301
L302
X301
8M
VR301
R373
130K
R330 1/6W68K
R331 62K
EM, ES, F400SERIES EOH
IDL5V
C329
0.01
DFG

B (POWER SUPPLY) LINE
CAPSTAN MOTOR SPEED
CAPSTAN MOTOR PHASE
DRUM MOTOR PHASE
DRUM MOTOR SPEED

CATED VOLTAGES WERE
URED DURING PB MODE.

*1	F200 SERIES	F300 SERIES	F400 SERIES
IC304	/	O	O
R386	/	13K	20K
R387	13K	13K	20K
R388	13K	56K	56K
R389	/	56K	56K
R390	/	22K	22K
R391	/	22K	22K
R392	/	56K	56K
R393	/	56K	56K
JS302	O	/	/
JS303	O	/	/

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131T

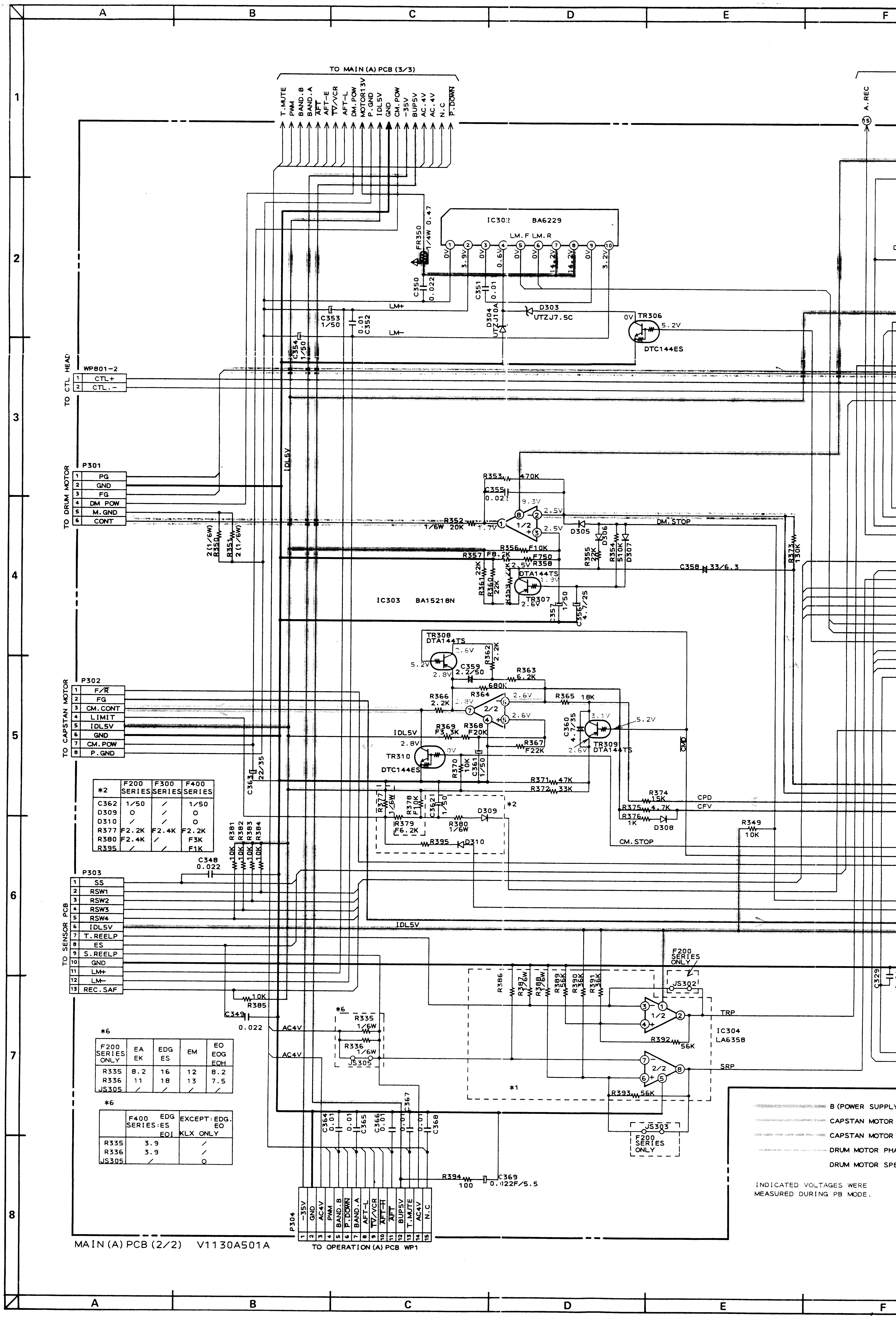
VARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES

MAIN (A) (2/3)
SCHEMATIC DIAGRAM

No.14-4 V113015M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO MAIN (A) PCB (3/3)
T.MUTE
PWM
BAND.B
BAND.A
AFT
TV/VCR
AFT-E
AFT-L
DM.POW
MOTOR13V
P.GND
IDL5V
GND
CM.POW
-35V
BUP5V
AC.4V
AC.4V
N.C
P.DOWN
A.REC
15
IC302 BA6229
LM.F LM.R
FR350 1/4W 0.47
0V
3.9V
0V
0.6V
0V
0V
14.2V
14.2V
0V
3.2V
C350 0.022
C351 0.01
D303 UTZJ7.5C
D304 UTZJ10A
LM+
LM-
C353 1/50
C352 0.01
C354 1/50
TR306 DTC144ES
0V
5.2V
TO CTL HEAD
WP801-2
CTL+
CTL.-
IDL5V
TO DRUM MOTOR
P301
PG
GND
FG
DM POW
M.GND
CONT
R350 2(1/6W)
R351 2(1/6W)
R353 470K
C355 0.02
9.3V
2.5V
2.5V
R352 1/6W 20K
1.7V
1/2
D305
D306
D307
DM.STOP
R356 F10K
R357 F8.2K
F750
2.5V R358
R355 22K
R354 510K
R373 130K
C358 33/6.3
R361 22K
R360 22K
R359
DTA144TS
1.3V
TR307
2.6V
C357 1/50
C356 4.7/25
IC303 BA15218N
TR308 DTA144TS
2.6V
R362 2.2K
5.2V
C359 2.2/50
2.8V
R363 6.2K
680K
R366 2.2K
2.8V
R364
2.6V
R365 18K
2/2
2.6V
R369 F3.3K
R368 F20K
IDL5V
2.8V
TR310 DTC144ES
0V
R367 F22K
R370 10K
C361 1/50
C360 4.7/35
3.1V
5.2V
TR309 DTA144TS
2.6V
CMD
TO CAPSTAN MOTOR
P302
F/R
FG
CM.CONT
LIMIT
IDL5V
GND
CM.POW
P.GND
C363 22/35
R371 47K
R372 33K
R377 1/6W
R378 F10K
C362 1/50
R379 F6.2K
R380 1/6W
D309
*2
R395
D310
R374 15K
R375 4.7K
R376 1K
D308
CPD
CFV
CM.STOP
R349 10K
R381 10K
R382 10K
R383 10K
R384 10K
C348 0.022
TO SENSOR PCB
P303
SS
RSW1
RSW2
RSW3
RSW4
IDL5V
T.REELP
ES
S.REELP
GND
LM+
LM-
REC.SAF
IDL5V
R385 10K
C349 0.022
AC4V
AC4V
*6
R335 1/6W
R336 1/6W
JS305
F200 SERIES ONLY
JS302
R386
R387 1/6W
R388 1/6W
R389 56K
R390 36K
R391 36K
1/2
TRP
IC304 LA6358
R392 56K
2/2
SRP
*1
R393 56K
JS303
F200 SERIES ONLY
C329
C364 0.01
C365 0.01
C366 0.01
C367 0.01
C368 0.01
R394 100
C369 0.022F/5.5
P304
-35V
GND
AC4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP5V
T.MUTE
AC4V
N.C
TO OPERATION (A) PCB WP1

*2	F200 SERIES	F300 SERIES	F400 SERIES
C362	1/50	/	1/50
D309	O	/	O
D310	/	/	O
R377	F2.2K	F2.4K	F2.2K
R380	F2.4K	/	F3K
R395	/	/	F1K

*6

F200 SERIES ONLY	EA EK	EDG ES	EM	EO EOG EOH
R335	8.2	16	12	8.2
R336	11	18	13	7.5
JS305	/	/	/	/

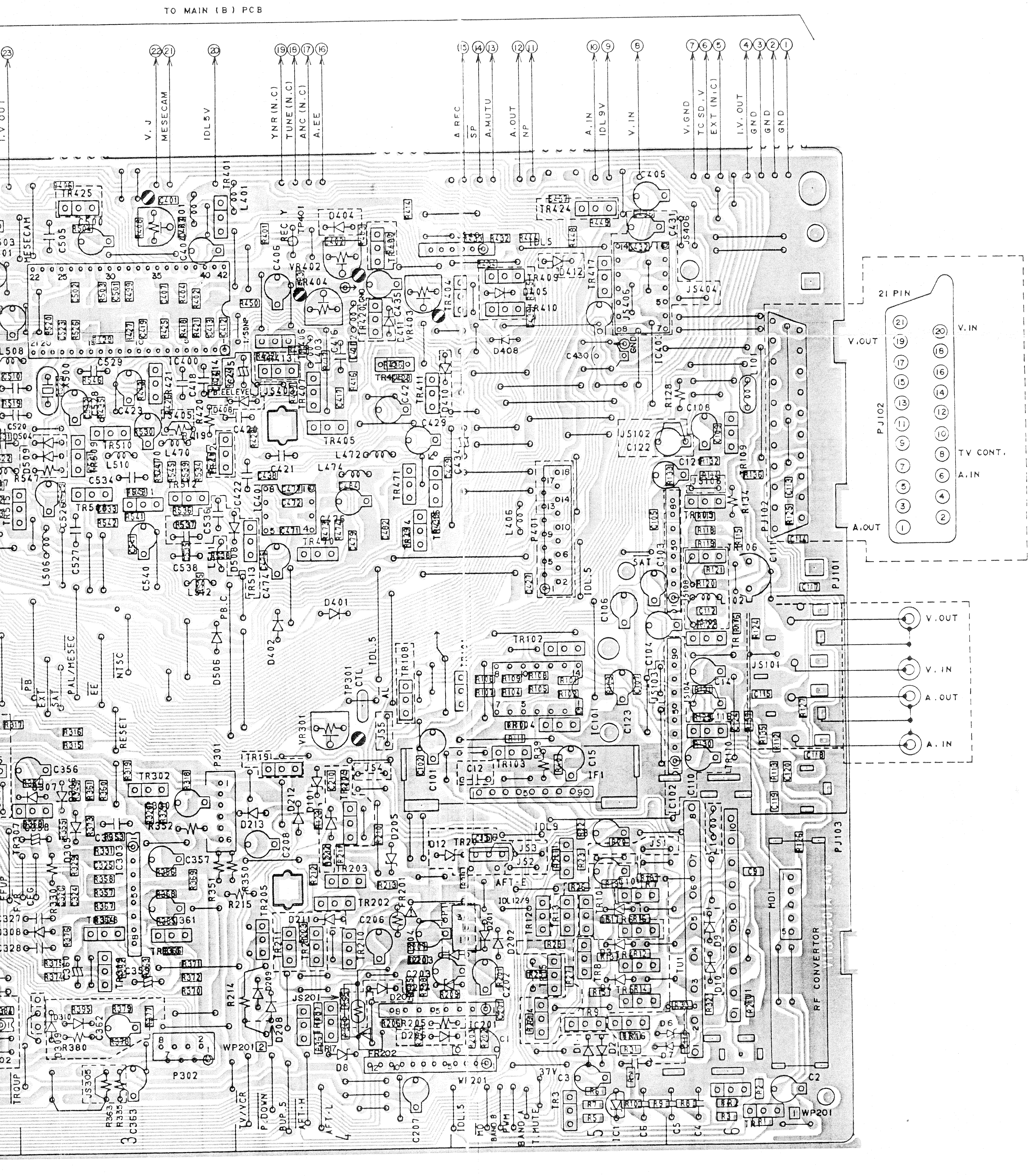
*6

	F400 SERIES: EDG ES EOI	EXCEPT: EDG. EO KLX ONLY
R335	3.9	/
R336	3.9	/
JS305	/	O

B (POWER SUPPLY
CAPSTAN MOTOR
CAPSTAN MOTOR
DRUM MOTOR PHA
DRUM MOTOR SPE

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

MAIN (A) PCB (2/2) V1130A501A


TO MAIN (B) PCB
I.V.OUT
V.J
MESECAM
IDL5V
YNR (N.C)
TUNE (N.C)
ANC (N.C)
A.EE
A.RFC
SP
A.MUTU
A.OUT
NP
A.IN
IDL9V
V.IN
V.GND
TC.SD.V
EXT (N.C)
I.V.OUT
GND
GND
GND
21 PIN
V.OUT
V.IN
PJ102
TV CONT.
A.IN
A.OUT
PJ101
V.OUT
V.IN
A.OUT
A.IN
PJ103
RF CONVERTOR
M01
WP201
TROUP
P302
P301
RESET
NTSC
EE
PAL/MESEC
SAT
EXT
PB
P401
IDL.5
VR301
TP301
CTL
AL
TP401
REC
VR402
VR403
VR404
T.MUTE
BAND
PVM
BAND B
MT
P.DOWN
BUP.5
AFT.H
AFT.L
TV/VCR
AFT.E
IDL12/9
IC101
IC102
IC103
IC401
IC400
IC303
IF1
TU1
37V

MAIN (A) PCB VI130A501AJ1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTAINING PARTS INFORMATION.

PRINCIPRL PARTS LOCATION

ICS

IC101	D5
IC201	F4,5
IC301	E1,2
IC302	F1,2
IC303	E,F3
IC400	C3
IC401	C,D4
IC402	C,D1

WF

WF201	F4,5

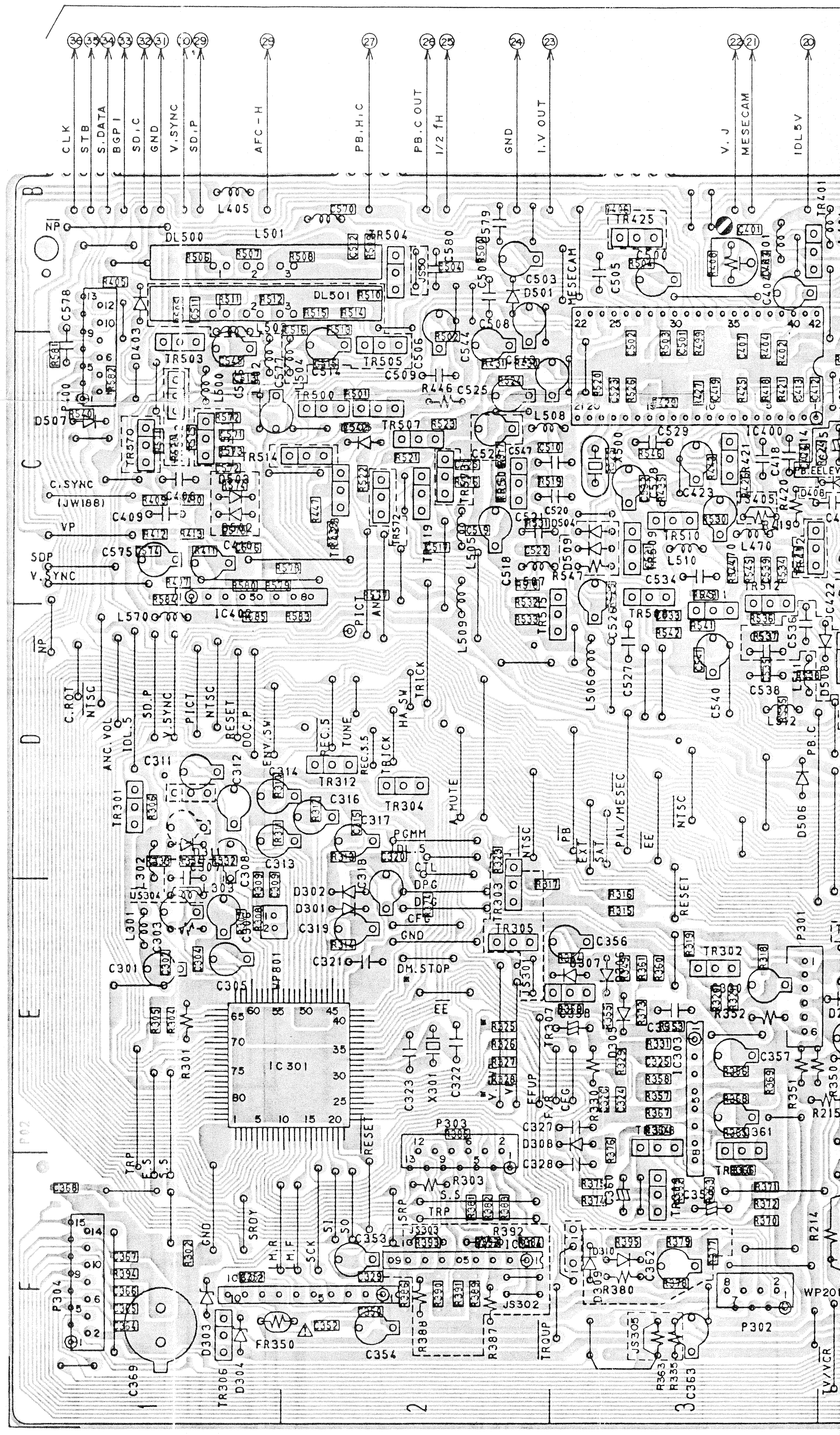
CONNECTORS

P1	E,F5
P301	E3
P302	E3
P303	E2
P304	F1
P400	B,C1
P401	D5

TRANSISTORS

TR1	F6
TR2	F6
TR3	F5
TR4	F5
TR5	F5
TR6	F5
TR7	E5
TR8	F5
TR9	F5
TR10	E,F5
TR11	E5
TR12	E5
TR13	E,F5
TR14	F5
TR16	F5
TR17	F4
TR18	F4
TR19	E4
TR20	E5
TR101	D5
TR102	D5
TR103	E5
TR104	E5
TR105	D6
TR107	D6
TR108	D4
TR109	C6
TR202	E4
TR203	E4
TR205	E,F4
TR210	E,F4
TR301	D1
TR302	E3
TR303	D,E2
TR304	D2
TR306	F1
TR307	E3
TR308	E,F4
TR309	F3
TR310	E,F3
TR312	D2
TR401	B3
TR404	C5
TR406	C4
TR407	C4
TR408	C4
TR409	C5
TR410	C5
TR414	D4
TR415	C4
TR417	C5
TR421	C3
TR425	B3
TR470	D4
TR471	C4
TR501	C2
TR503	C1
TR504	C1
TR505	C2
TR506	C2
TR507	C2
TR508	C,D3
TR509	C3
TR510	C3
TR511	D3
TR512	C,D3
TR513	D4
TR514	C2
TR515	C2
TR570	C1
TR571	C1
TR572	C2

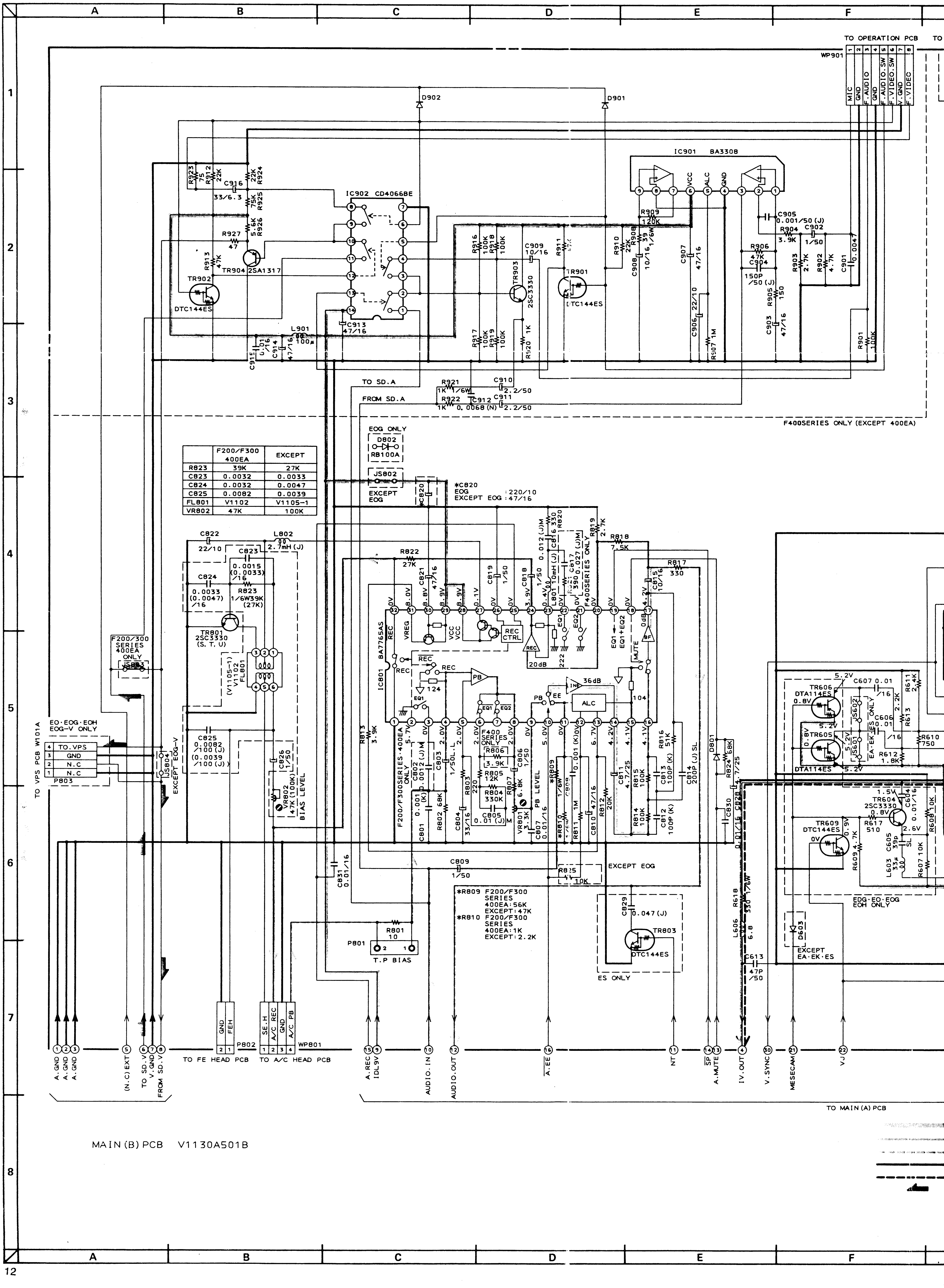
TO MAIN (B)


CLK
STB
S.DATA
BGP I
SD.C
GND
V.SYNC
SD.P
AFC-H
PB.H.C
PB.C OUT
1/2 fH
GND
I.V OUT
V.J
MESECAM
IDL5V
B
C
D
E
F
1
2
3
IC301
P303
P304
P301
P302
IC400
IC402
DL500
DL501

MAIN (A) PCB

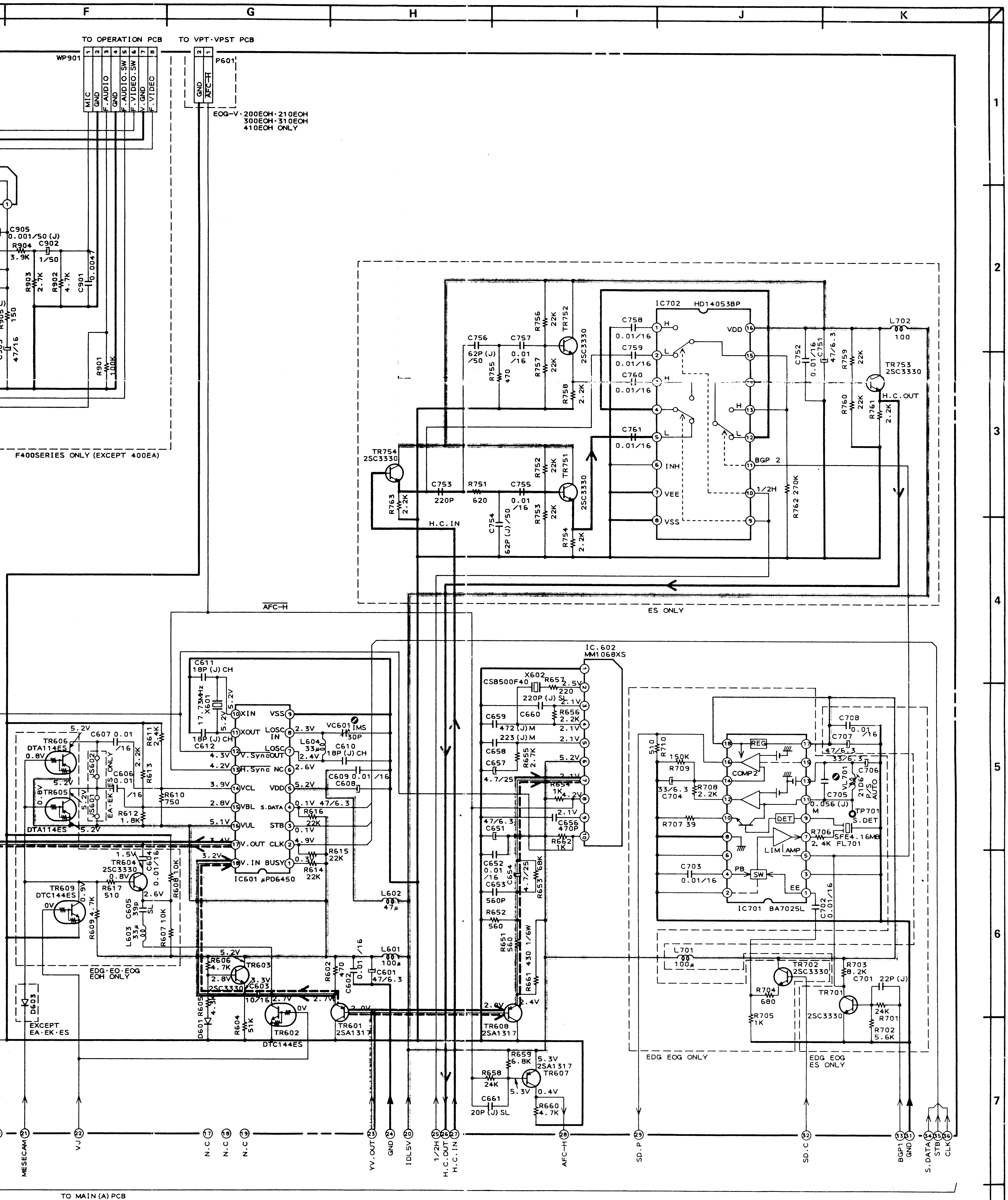
WARNING ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL, NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT


A
B
C
D
E
F
TO OPERATION PCB
WP901
MIC
GND
F.AUDIO
GND
F.AUDIO.SW
F.VIDEO.SW
V.GND
F.VIDEO
D902
D901
IC901 BA3308
VCC
ALC
GND
IC902 CD4066BE
R923 75
R912 22K
R924 22K
C916 33/6.3
R925 75K
R926 5.6K
R927 47
R913 47K
TR904 2SA1317
TR902 DTC144ES
R909 120K
C905 0.001/50 (J)
R904 3.9K
C902 1/50
R906 47K
C904 150P /50 (J)
R905 150
C903 47/16
R903 2.7K
R902 4.7K
C901 0.0047
R901 100K
R916 100K
R918 100K
C909 10/16
R911
R910 22K
R908 39 1/6W
C908 10/16
C907 47/16
TR903 2SC3330
TR901 DTC144ES
C906 22/10
R907 1M
R917 100K
R919 100K
R920 1K
C913 47/16
L901 100μ
C915 0.01/16
C914 47/16
TO SD.A
FROM SD.A
R921 1K 1/6W
C910 2.2/50
R922 1K
C912 0.0068 (N)
C911 2.2/50
F400SERIES ONLY (EXCEPT 400EA)
EOG ONLY
D802
RB100A
JS802
EXCEPT EOG
*C820
*C820 EOG :220/10 EXCEPT EOG :47/16
C822 22/10
L802 2.7mH (J)
C823
0.0015 (0.0033) /16
C824 0.0033 (0.0047) /16
R823 1/6W39K (27K)
TR801 2SC3330 (S. T. U)
(V1105-1) V1102 FL801
F200/300 SERIES 400EA ONLY
JS803
EO·EOG·EOH EOG-V ONLY
TO VPS PCB W101A
TO.VPS
GND
N.C
N.C
P803
JS804
EXCEPT EOG-V
C825 0.0082 /100 (J) (0.0039 /100 (J))
C826 1/50
VR802 47K (100K)
BIAS LEVEL
R822 27K
C821 47/16
C819 1/50
C818 1/50
0.012 (J)M
R820 330
R819 2.7K
R818 7.5K
R817 330
C815 10/16
C817 0.027 (J)M
L801 10mH (J)
F400SERIES ONLY
IC801 BA7765AS
REC
VREG
VCC
REC CTRL
EQ1
EQ2
20dB
222
EQ1←EQ1+EQ2
MUTE
0dB
BF
PB
36dB
LINE
ALC
EE
104
124
F400 SERIES ONLY
R806 3.9K
R805 12K
R804 330K
R807 6.8K
C805 0.01 (J) M
C806 1/50
VR801 3.3K
PB LEVEL
R813 3.9K
F200/F300SERIES·400EA ONLY
C802 0.001 (J) M
C803 1/50L.L
C801 0.001 (K)
R802 68K
C804 33/16
R803 220
C807 0.01/16
*R809
*R810
C809 (K)
R811 1M
C810 47/16
R812 20K
C811 4.7/25
R815 100K
R814 100K
C813 100P (K)
C812 100P (K)
R816 51K
C814 200P (J) SL
D801
R824 68K
C828 4.7/25
C830 0.01/16
C831 0.01/16
C809 1/50
R825 10K
EXCEPT EOG
*R809 F200/F300 SERIES 400EA:56K EXCEPT:47K
*R810 F200/F300 SERIES 400EA:1K EXCEPT:2.2K
C829 0.047 (J)
TR803 DTC144ES
ES ONLY
R801 10
P801
T.P BIAS
R618 330 1/6W
L606 6.8
C613 47P /50
TR606 DTA114ES
TR605 DTA114ES
C607 0.01 /16
R611 2.4K
R613 2.2K
JS602
JS601
EA·EK·ES ONLY
C606 0.01 /16
R610 750
R612 1.8K
TR604 2SC3330
C604 0.01/16
TR609 DTC144ES
R617 510
R608 10K
R609 4.7K
C605 39p
L603 33μ
R607 10K
SL
EOG·EO·EOG EOH ONLY
D603
EXCEPT EA·EK·ES
A.GND
A.GND
A.GND
(N.C)EXT
TO SD.V
V.GND
FROM SD.V
GND
FEH
P802
TO FE HEAD PCB
SE.H
A/C REC
GND
A/C PB
WP801
TO A/C HEAD PCB
A.REC IDL9V
AUDIO.IN
AUDIO.OUT
A.EE
NT
SP A.MUTE
IV.OUT
V.SYNC
MESECAM
VJ
TO MAIN (A) PCB

	F200/F300 400EA	EXCEPT
R823	39K	27K
C823	0.0032	0.0033
C824	0.0032	0.0047
C825	0.0082	0.0039
FL801	V1102	V1105-1
VR802	47K	100K

MAIN (B) PCB V1130A501B


F
G
H
I
J
K
1
2
3
4
5
6
7
8
TO OPERATION PCB
TO VPT·VPST PCB
WP901
MIC
GND
F.AUDIO
F.AUDIO.SW
GND
F.VIDEO.SW
V.GND
F.VIDEO
P601
GND
AFC-H
EOG-V·200EOH·210EOH 300EOH·310EOH 410EOH ONLY
C905 0.001/50 (J)
R904 3.9K
C902 1/50
R903 2.7K
R902 4.7K
C901 0.0047
R901 100K
F400SERIES ONLY (EXCEPT 400EA)
IC702 HD14053BP
C758 0.01/16
C759 0.01/16
C760 0.01/16
C761 0.01/16
VDD
INH
VEE
VSS
BGP 2
1/2H
C756 62P (J) /50
C757 0.01 /16
R755 470
R756 22K
R757 22K
R758 2.2K
TR752 2SC3330
C752 0.01/16
C751 47/6.3
R759 22K
L702 100
TR753 2SC3330
H.C.OUT
R760 22K
R761 2.2K
R762 270K
TR754 2SC3330
R763 2.2K
C753 220P
R751 620
C755 0.01 /16
C754 62P (J) /50
R752 22K
R753 22K
R754 2.2K
TR751 2SC3330
H.C.IN
ES ONLY
AFC-H
IC.602 MM1068XS
X602 CSB500F40
R657 220
C659 472 (J) M
C660 223 (J) M
220P (J) SL
R656 2.2K
C658
C657 4.7/25
R655 2.7K
R654 1K
C656 470P
47/6.3 C651
R662 1K
C652 0.01 /16
C653 560P
C654 4.7/25
R653 68K
R652 560
R651 560
430 1/6W
R661
TR608 2SA1317
R659 6.8K
R658 24K
TR607 2SA1317
C661 20P (J) SL
R660 4.7K
C611 18P (J) CH
X601 17.73MHz
C612 18P (J) CH
IC601 μPD6450
XIN
XOUT
V.Sync
H.Sync
VCL
VBL
VUL
V.OUT
V.IN
VSS
LOSC IN
LOSC OUT
NC
VDD
S.DATA
STB
CLK
BUSY
VC601 IMS 30P
L604 33μ
C610 18P (J) CH
C609 0.01/16
C608
R616 22K
R615 22K
R614 22K
L602 47μ
L601 100μ
C601 47/6.3
C602 0.01 /16
R602 470
TR601 2SA1317
TR602 DTC144ES
TR603 2SC3330
R606 4.7K
C603 10/16
R605 4.3K
R604 51K
D601
TR606 DTA114ES
TR605 DTA114ES
C607 0.01 /16
C606 0.01 /16
S602
S601
EA·EK·ES ONLY
R611 2.2K
R613 2.2K
R610 750
R612 1.8K
TR604 2SC3330
C604 0.01/16
R608 10K
TR609 DTC144ES
R617 510
C605 39p SL
L603 33μ
R607 10K
R609 4.7K
EDG·EO·EOG EOH ONLY
D603
EXCEPT EA·EK·ES
IC701 BA7025L
REG
COMP2
DET
LIM
AMP
PB
SW
EE
R710 510
R709 150K
C704 33/6.3
R708 2.2K
R707 39
C703 0.01/16
C708 0.01 /16
C707 47/6.3
C706 33/6.3
VL701 21D6
P/S AUTO
C705 0.056 (J) M
TP701 S.DET
R706 2.4K
SFE4.16MB FL701
C702 0.01/16
L701 100μ
TR702 2SC3330
R703 8.2K
C701 22P (J)
R704 680
R705 1K
TR701 2SC3330
R701 24K
R702 5.6K
EDG EOG ONLY
EDG EOG ES ONLY
MESECAM
VJ
N.C
N.C
N.C
YV.OUT
GND
IDL5V
1/2H
H.C.OUT
H.C.IN
AFC-H
SD.P
SD.C
BGP1
GND
S.DATA
STB
CLK
TO MAIN (A) PCB

:B (POWER SUPPLY) LINE
:AUDIO REC SIGNAL LINE
:AUDIO PB SIGNAL LINE
:PB CHROMA SIGNAL LINE
:PB Y SIGNAL LINE
:VIDEO IN (REC, E-E) SIGNAL LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL DIODES ARE 1SS131T

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES

MAIN (B)
SCHEMATIC DIAGRAM
No.14-6 V113017M
A1

PRINCIPAL PARTS LOCATION

ICS

IC601	A3
IC701	A1
IC702	A2
IC801	A4

WP

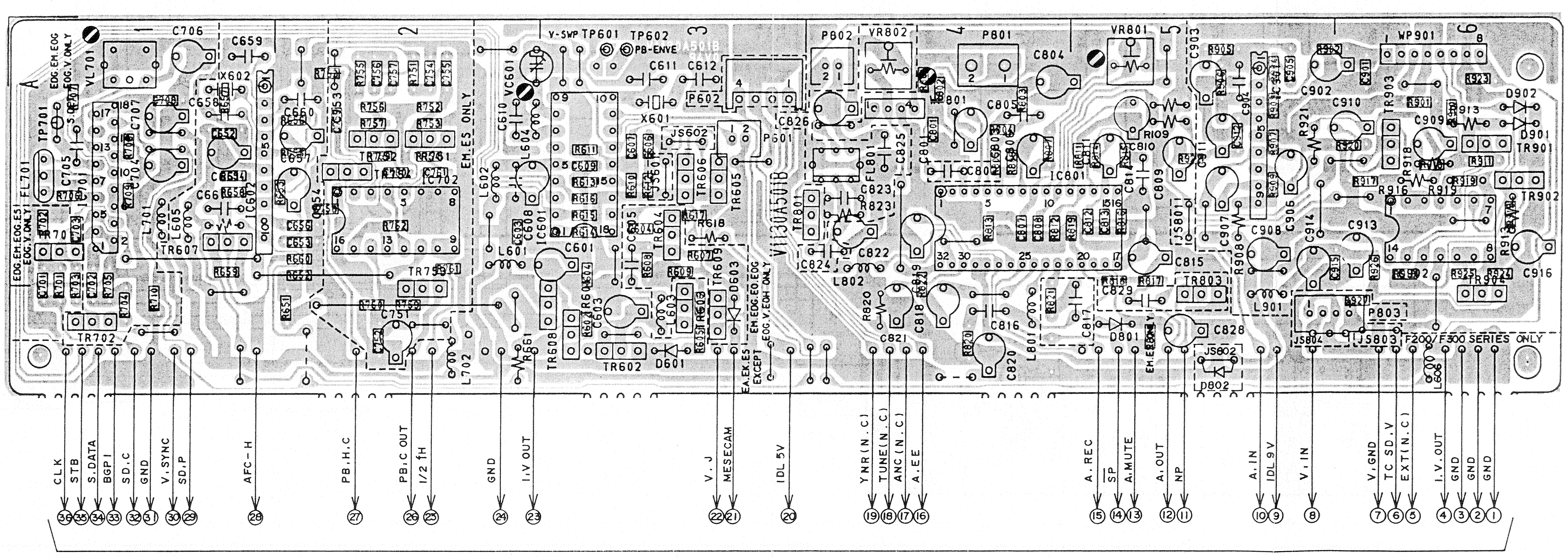
WP801	A4

CONNECTORS

P601	A3
P602	A3
P801	A4
P802	A4
P803	A5,6

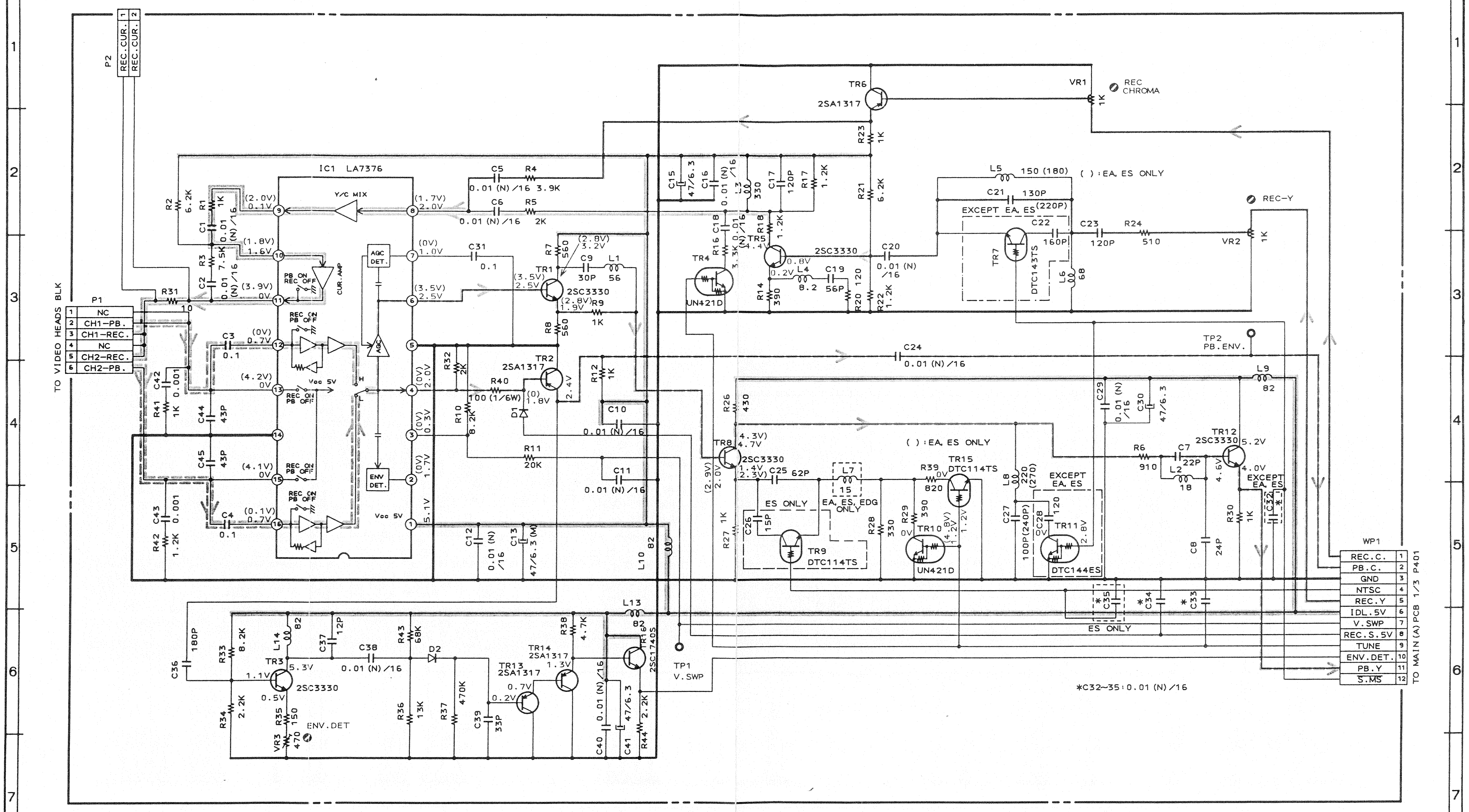
TRANSISTORS

TR601	A3
TR602	A3
TR603	A3
TR604	A3
TR605	A3
TR606	A3
TR607	A1
TR608	A3
TR609	A3
TR701	A1
TR702	A1
TR751	A2
TR752	A2
TR753	A2
TR754	A2
TR801	A4
TR803	A5


CLK ㊱
STB ㉟
S.DATA ㉞
BGP1 ㉝
SD.C ㉜
GND ㉛
V.SYNC ㉚
SD.P ㉙
AFC-H ㉘
PB.H.C ㉗
PB.C OUT ㉖
1/2 fH ㉕
GND ㉔
I.V OUT ㉓
V.J ㉒
MESECAM ㉑
IDL 5V ⑳
YNR(N.C) ⑲
TUNE(N.C) ⑱
ANC(N.C) ⑰
A.EE ⑯
A.REC ⑮
SP ⑭
A.MUTE ⑬
A.OUT ⑫
NP ⑪
A.IN ⑩
IDL 9V ⑨
V.IN ⑧
V.GND ⑦
TC SD.V ⑥
EXT(N.C) ⑤
I.V.OUT ④
GND ③
GND ②
GND ①
TO MAIN (A) PCB
F200/F300 SERIES ONLY
EM.ES ONLY

MAIN (B) PCB V1130A501BJ1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTAINING PARTS INFORMATION.



P2
REC.CUR. 1
REC.CUR. 2
TO VIDEO HEADS BLK
P1
1 NC
2 CH1-PB.
3 CH1-REC.
4 NC
5 CH2-REC.
6 CH2-PB.
IC1 LA7376
Y/C MIX
AGC DET.
CUR. AMP
ENV DET.
REC ON PB OFF
PB ON REC OFF
Vcc 5V
R31 10
R2 6.2K
R1 1K
C1 0.01 (N)/16
R3 7.5K
C2 0.01 (N)/16
C3 0.1
C4 0.1
C42 0.001
R41 1K
C44 43P
C45 43P
C43 0.001
R42 1.2K
C5 0.01 (N)/16
R4 3.9K
C6 0.01 (N)/16
R5 2K
C31 0.1
TR1 2SC3330
R7 560
C9 30P
L1 56
R9 1K
R8 560
TR2 2SA1317
R32 2K
R40 100 (1/6W)
D1
R10 8.2K
R12 1K
C10 0.01 (N)/16
R11 20K
C11 0.01 (N)/16
C12 0.01 (N)/16
C13 47/6.3 (M)
L10 82
TR6 2SA1317
R23 1K
VR1 1K
REC CHROMA
C15 47/6.3
C16 0.01 (N)/16
L3 330
C17 120P
R17 1.2K
R21 6.2K
C18 0.01 (N)/16
R16 3.3K
R18 1.2K
TR5 2SC3330
TR4 UN421D
R14 390
L4 8.2
C19 56P
R20 120
R22 1.2K
C20 0.01 (N)/16
L5 150 (180)
( ) : EA, ES ONLY
C21 130P
EXCEPT EA, ES (220P)
TR7 DTC143TS
C22 160P
L6 68
C23 120P
R24 510
VR2 1K
REC-Y
C24 0.01 (N)/16
TP2 PB.ENV.
L9 82
R26 430
TR8 2SC3330
C25 62P
L7 15
ES ONLY
EA, ES, EDG ONLY
C26 15P
TR9 DTC114TS
R27 1K
R28 330
R29 330
TR10 UN421D
R39 820
TR15 DTC114TS
L8 220 (270)
C27 100P (240P)
C28 120
TR11 DTC144ES
EXCEPT EA, ES
C29 0.01 (N)/16
C30 47/6.3
R6 910
C7 22P
L2 18
TR12 2SC3330
C8 24P
R30 1K
C32 *
C35 *
C34 *
C33 *
ES ONLY
WP1
1 REC.C.
2 PB.C.
3 GND
4 NTSC
5 REC.Y
6 IDL.5V
7 V.SWP
8 REC.S.5V
9 TUNE
10 ENV.DET.
11 PB.Y
12 S.MS
TO MAIN (A) PCB 1/3 P401
*C32~35 : 0.01 (N)/16
C36 180P
R33 8.2K
L14 82
C37 12P
C38 0.01 (N)/16
R43 68K
D2
TR3 2SC3330
R34 2.2K
R35 150
VR3 470
ENV.DET
R36 13K
R37 470K
C39 33P
TR13 2SA1317
TR14 2SA1317
R38 4.7K
L13 82
TR16 2SC1740S
C40 0.01 (N)/16
C41 47/6.3
R44 2.2K
TP1 V.SWP

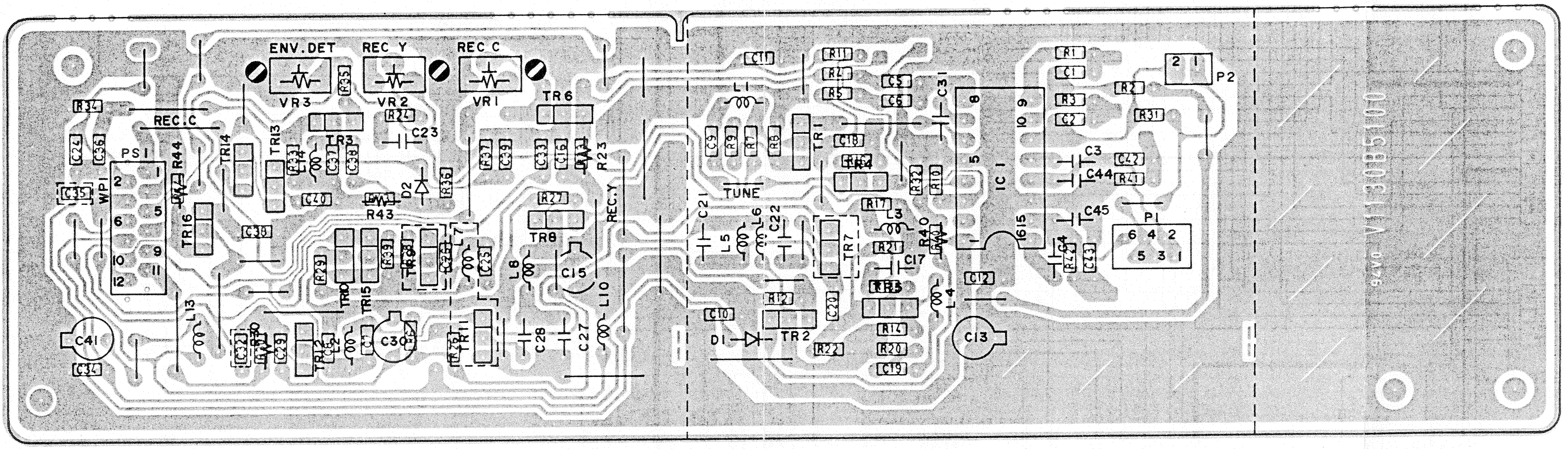
PRE AMP PCB V1130B5100

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE

▬ : POWER SUPPLY LINE
▬ : REC CHROMA SIGNAL LINE
▬ : PB CHROMA SIGNAL LINE
▬ : REC Y SIGNAL LINE
▬ : PB Y SIGNAL LINE

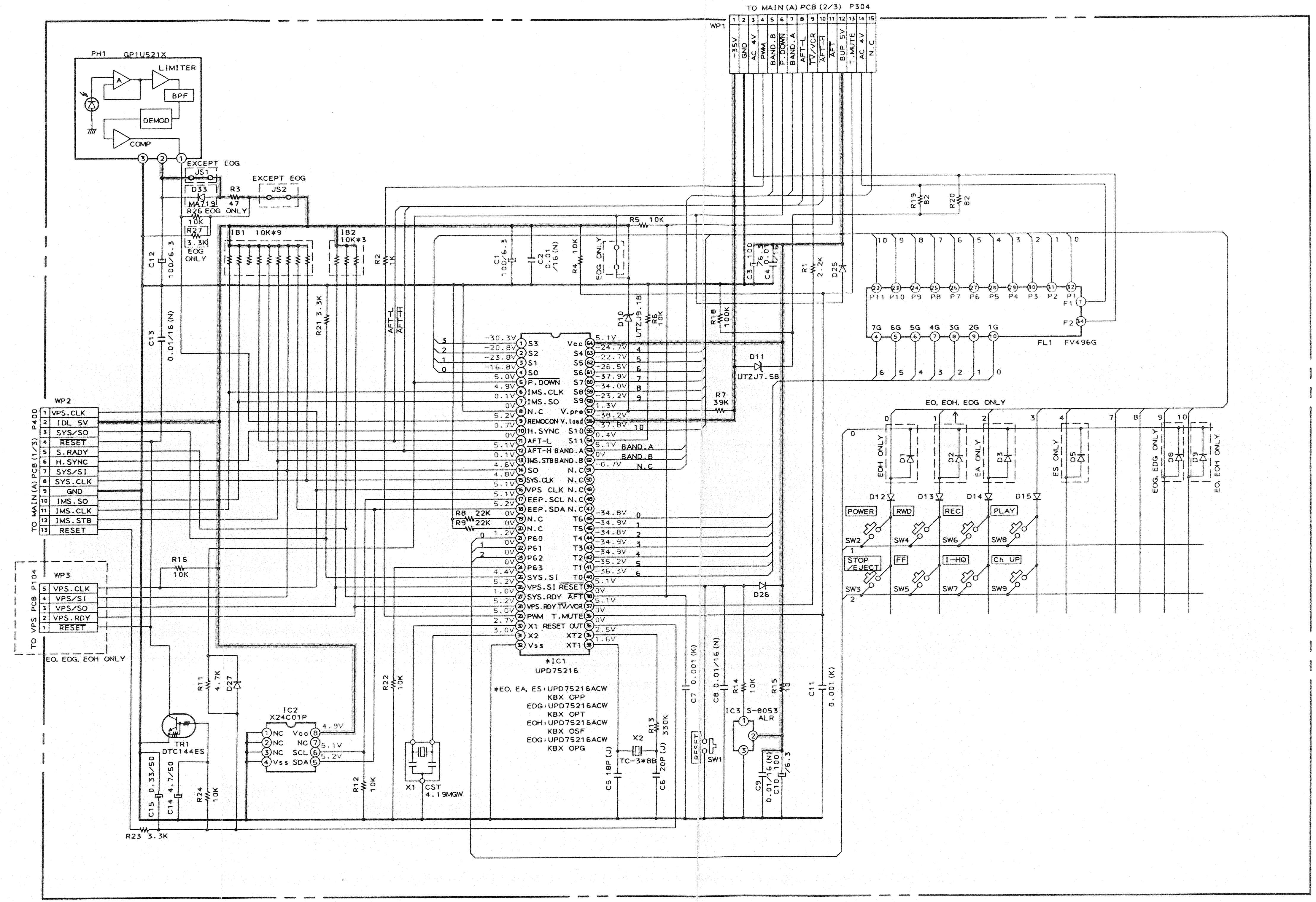
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES
PRE AMP
SCHEMATIC DIAGRAM
No.14-7 V113018M
A2


ENV.DET
REC Y
REC C
VR3
VR2
VR1
TR6
REC.C
PS1
WP1
R44
TR14
TR13
TR3
C23
R24
D2
R23
REC.Y
TR8
C15
R27
R43
TR16
L13
C41
C34
C30
TR11
TR10
TR15
L8
L10
C27
C28
TUNE
L1
L5
L6
C21
C22
TR1
TR7
TR2
D1
C10
C13
C31
IC 1
L3
L4
R40
C17
C12
P2
P1
C3
C44
C45
R1
R2
R3
R31
R41
C1
C2
C42

PRE AMP PCB V1130B5100

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTAINING
PARTS INFORMATION.


TO MAIN (A) PCB (2/3) P304
WP1
-35V
GND
AC 4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC 4V
N.C
PH1 GP1U521X
LIMITER
BPF
DEMOD
COMP
EXCEPT EOG
JS1
D33
MA719
R3 47
EXCEPT EOG
JS2
R26 EOG ONLY
10K
R27 3.3K
EOG ONLY
IB1 10K*9
IB2 10K*3
R2 1K
C12 100/6.3
C13 0.01/16 (N)
R21 3.3K
AFT-L
AFT-H
C1 100/6.3
C2 0.01/16 (N)
R4 10K
EOG ONLY
R5 10K
D10 UTZJ9.1B
R6 10K
C3 100/6.3
C4 0.01/16
R1 2.2K
D25
R18 100K
D11 UTZJ7.5B
R7 39K
R19 82
R20 82
P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1
F1
F2
7G 6G 5G 4G 3G 2G 1G
FL1 FV496G
WP2
TO MAIN (A) PCB (1/3) P400
VPS.CLK
IDL 5V
SYS/SO
RESET
S.RADY
H.SYNC
SYS/SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
WP3
TO VPS PCB P104
VPS.CLK
VPS/SI
VPS/SO
VPS.RDY
RESET
EO, EOG, EOH ONLY
R16 10K
R8 22K
R9 22K
S3 S2 S1 S0 P.DOWN IMS.CLK IMS.SO N.C REMOCON H.SYNC AFT-L AFT-H IMS.STB SO SYS.CLK VPS CLK EEP.SCL EEP.SDA N.C N.C P60 P61 P62 P63 SYS.SI VPS.SI SYS.RDY VPS.RDY PWM X1 X2 Vss
Vcc S4 S5 S6 S7 S8 S9 V.pre V.load S10 S11 BAND.A BAND.B N.C N.C N.C N.C N.C T6 T5 T4 T3 T2 T1 T0 RESET AFT TV/VCR T.MUTE RESET OUT XT2 XT1
BAND.A
BAND.B
N.C
*IC1
UPD75216
*EO, EA, ES: UPD75216ACW KBX OPP
EDG: UPD75216ACW KBX OPT
EOH: UPD75216ACW KBX OSF
EOG: UPD75216ACW KBX OPG
D26
C7 0.001 (K)
C8 0.01/16 (N)
R14 10K
R15 10
C11 0.001 (K)
IC3 S-8053 ALR
RESET
SW1
C9 0.01/16 (N)
C10 100/6.3
X2 TC-3*8B
R13 330K
C5 18P (J)
C6 20P (J)
X1 CST 4.19MGW
R22 10K
R12 10K
IC2 X24C01P
NC NC NC Vss Vcc NC SCL SDA
R11 4.7K
D27
TR1 DTC144ES
C15 0.33/50
C14 4.7/50
R24 10K
R23 3.3K
EO, EOH, EOG ONLY
EOH ONLY
D1
D2
EA ONLY
D3
ES ONLY
D5
EOG, EDG ONLY
D8
D9
EO, EOH ONLY
D12 D13 D14 D15
POWER
RWD
REC
PLAY
SW2 SW4 SW6 SW8
STOP /EJECT
FF
I-HQ
Ch UP
SW3 SW5 SW7 SW9

OPERATION (A) PCB V1130B5070

▬ : B (POWER SUPPLY) LINE

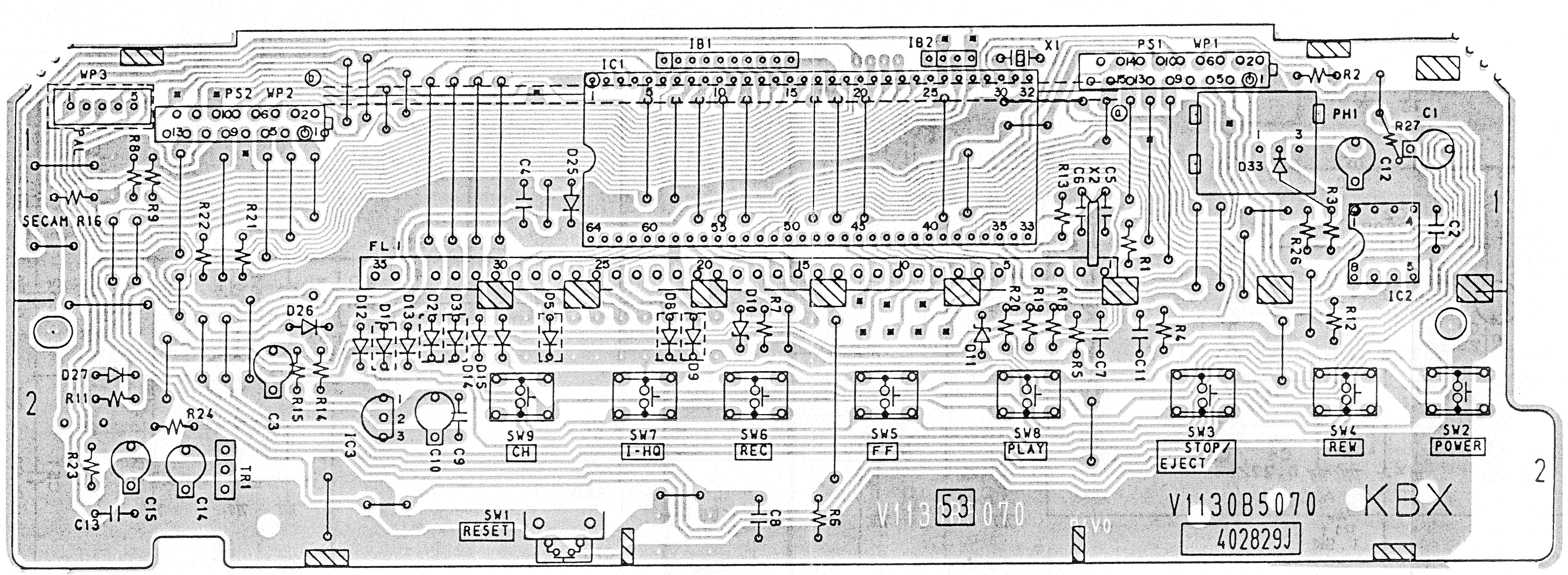
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL DIODES ARE 1SS131T

VS-F180EO
VS-F190EOH
VS-F200EOG
VS-F220EOH/EDG
VS-F222EA
VS-F230EOH
VS-F240ES

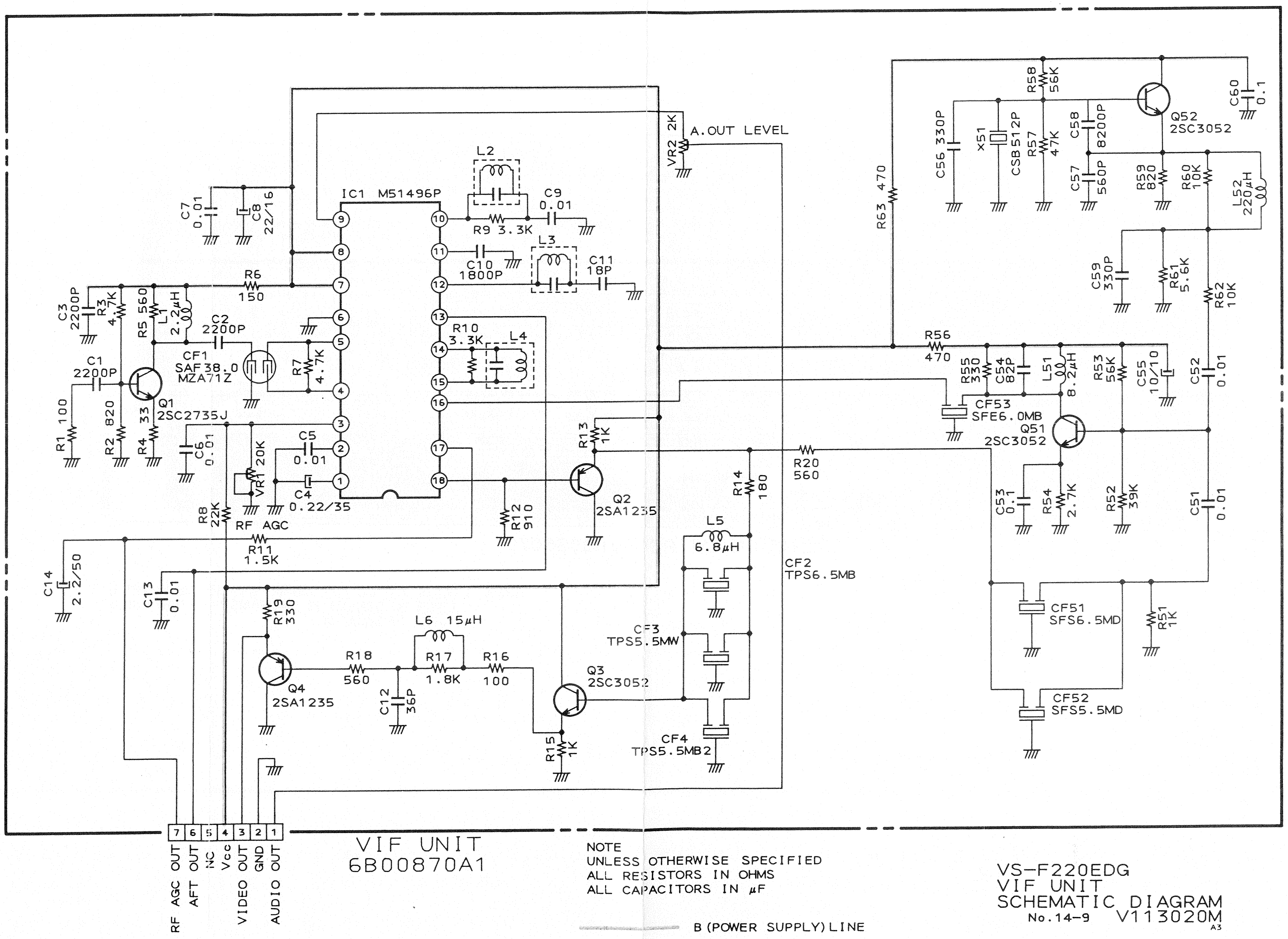
OPERATION (A) SCHEMATIC DIAGRAM

No.14-8 V113019M
A1


IB1
IB2
X1
PS1
WP1
WP3
PS2
WP2
IC1
R2
PH1
R27
C1
C12
D33
R3
R26
C2
IC2
R12
R4
C11
C7
R5
R13
C6
X2
C5
R1
R18
R19
R20
D11
R8
R9
R16
SECAM
R22
R21
C4
D25
FL1
D26
D12
D1
D13
D2
D3
D14
D15
D4
D5
D8
D9
D10
R7
D27
R11
R24
R23
C3
R15
R14
IC3
C10
C9
C13
C15
C14
TR1
SW9
CH
SW7
I-HQ
SW6
REC
SW5
FF
SW8
PLAY
SW3
STOP/
EJECT
SW4
REW
SW2
POWER
SW1
RESET
C8
R6
V1130B5070
KBX
402829J

OPERATION (A) PCB V1130B5070

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTAINING PARTS INFORMATION.

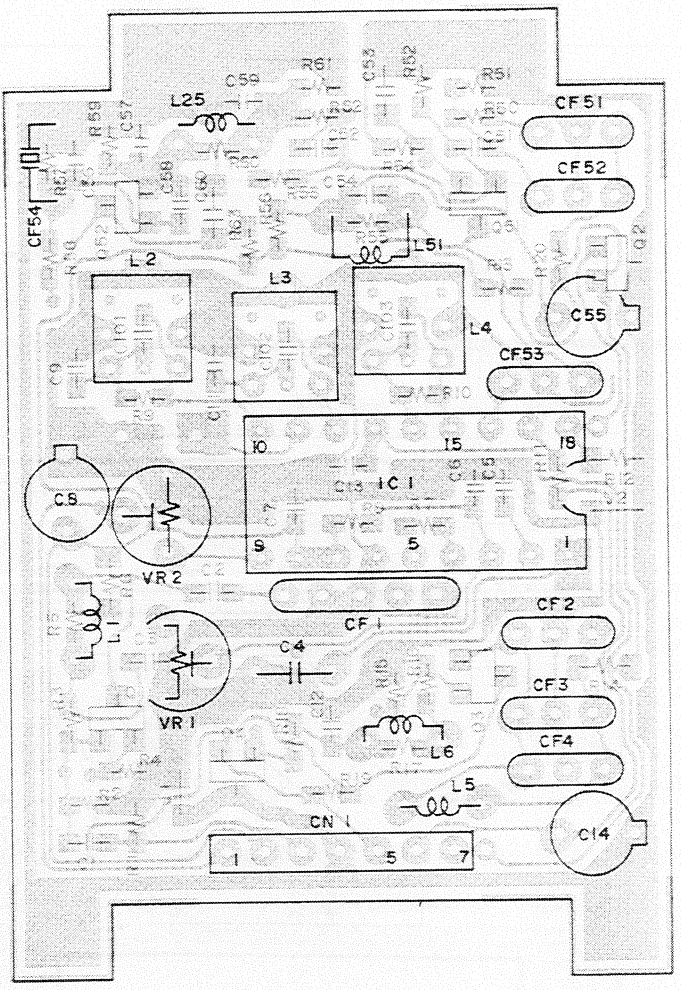

IC1 M51496P
L2
C9 0.01
R9 3.3K
L3
C10 1800P
C11 18P
R10 3.3K
L4
C7 0.01
C8 22/16
R6 150
C3 2200P
R3 4.7K
R5 560
L1 2.2μH
C2 2200P
CF1 SAF38.0 MZA71Z
R7 4.7K
C1 2200P
Q1 2SC2735J
R1 100
R2 820
R4 33
C6 0.01
VR1 20K
C5 0.01
C4 0.22/35
R8 22K
RF AGC
R11 1.5K
R12 910
R13 1K
Q2 2SA1235
VR2 2K
A.OUT LEVEL
C14 2.2/50
C13 0.01
R19 330
Q4 2SA1235
R18 560
C12 36P
L6 15μH
R17 1.8K
R16 100
Q3 2SC3052
R15 1K
R14 180
L5 6.8μH
CF2 TPS6.5MB
CF3 TPS5.5MW
CF4 TPS5.5MB2
R20 560
R63 470
R58 56K
Q52 2SC3052
C60 0.1
C56 330P
X51 CSB512P
R57 47K
C58 8200P
C57 560P
R59 820
R60 10K
L52 220μH
C59 330P
R61 5.6K
R62 10K
R56 470
R55 330
C54 82P
L51 8.2μH
R53 56K
C55 10/10
C52 0.01
CF53 SFE6.0MB
Q51 2SC3052
C53 0.1
R54 2.7K
R52 39K
C51 0.01
CF51 SFS6.5MD
R51 1K
CF52 SFS5.5MD
7 6 5 4 3 2 1
RF AGC OUT
AFT OUT
NC
Vcc
VIDEO OUT
GND
AUDIO OUT

VIF UNIT
6B00870A1

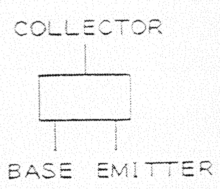
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF

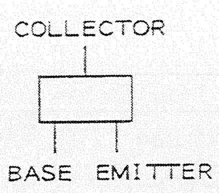
B (POWER SUPPLY) LINE

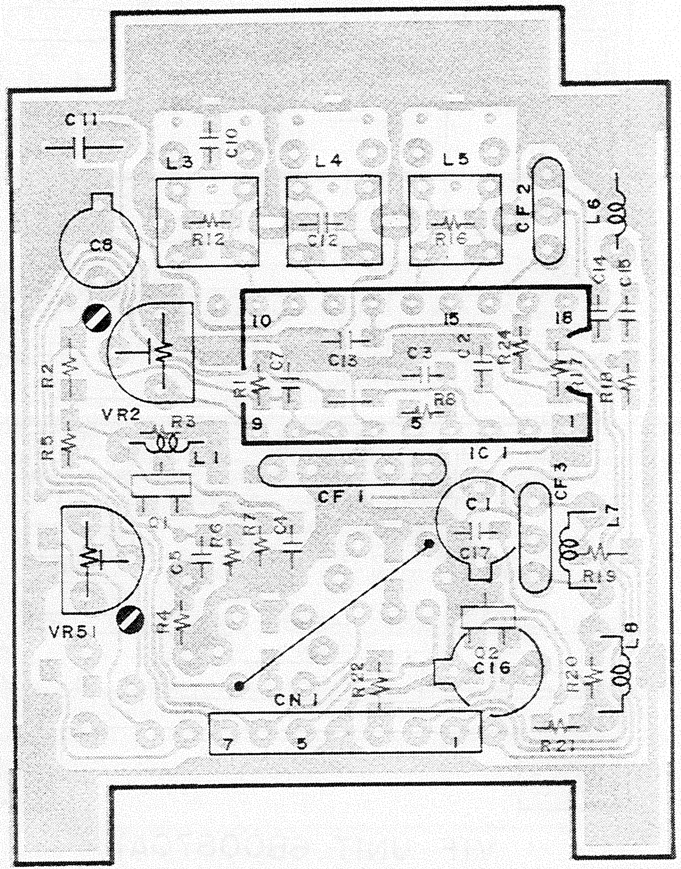
VS-F220EDG
VIF UNIT
SCHEMATIC DIAGRAM
No.14-9 V113020M
A3


C59
R61
C53
R52
R51
L25
R62
CF51
CF52
CF53
CF54
L2
L3
L51
L4
C55
C101
C102
C103
IC1
10
15
18
5
1
C5
VR2
VR1
C4
CF1
CF2
CF3
CF4
L6
L5
C14
CN1
1
5
7

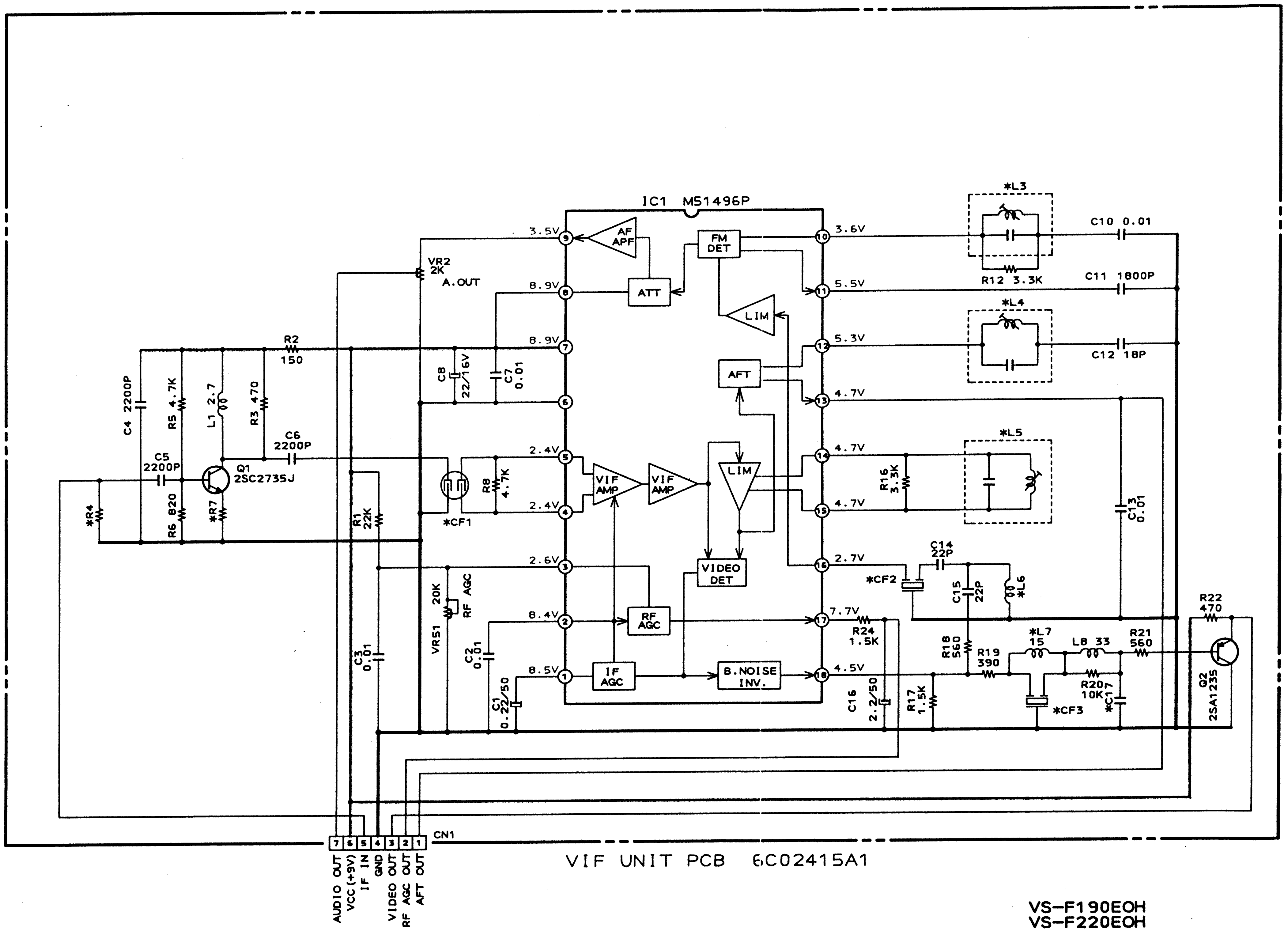
VIF UNIT 6B00870A1
(EDG ONLY)


COLLECTOR
BASE
EMITTER


COLLECTOR
BASE
EMITTER


C11
C10
L3
L4
L5
CF 2
L6
C8
R12
C12
R16
C14
C15
10
15
18
C13
C3
C2
R24
R2
C7
R1
R17
R18
R8
VR2
R3
9
5
1
R5
L1
IC 1
CF 1
C1
CF3
L7
C4
C6
R6
R7
C5
C17
R19
VR51
R4
C2
L8
C16
R20
R22
CN 1
7
5
1
R21

VIF UNIT 6C02415A1
(EXCEPT E0, E0G.EDG)


IC1 M51496P
AF APF
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
3.5V
8.9V
8.9V
2.4V
2.4V
2.6V
8.4V
8.5V
3.6V
5.5V
5.3V
4.7V
4.7V
4.7V
2.7V
7.7V
4.5V
VR2 2K
A.OUT
R2 150
C8 22/16V
C7 0.01
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
Q1 2SC2735J
*R4
R6 820
*R7
R8 4.7K
*CF1
R1 22K
C3 0.01
20K RF AGC
VR51
C2 0.01
C1 0.22/50
*L3
C10 0.01
R12 3.3K
C11 1800P
*L4
C12 18P
*L5
R16 3.3K
C13 0.01
C14 22P
*CF2
C15 22P
*L6
R22 470
R24 1.5K
R18 560
R19 390
*L7 15
L8 33
R21 560
R20 10K
*C17
*CF3
C16 2.2/50
R17 1.5K
Q2 2SA1235
CN1
7
6
5
4
3
2
1
AUDIO OUT
VCC(+9V)
IF IN
GND
VIDEO OUT
RF AGC OUT
AFT OUT
VIF UNIT PCB 6C02415A1

※	EOH	EA	ES
CF1	SAF38.9 MZW70Z	SAF36.9 MZ70Z	SAF38.9 MZ70Z
CF2	SFE 5.5MBF	←	SFE 6.0MBF
CF3	TPS 5.5MW	←	TPS 6.0MB2
L 3	6F16263 A2	←	6F16263 A3
L 4	6F16215 MZ70Z	6F16115 B3	6F16215 A1
L 5	6F16346 A1	6F16113 A1	6F16346 A1
L 6	18µ	←	15µ
L 7	15µ	18µ	15µ
R 4	100	150	100
R 7	22	←	←
R16	——	10K	10K
C17	CH12P	←	CH15P

—— B (POWER SUPPLY) LINE

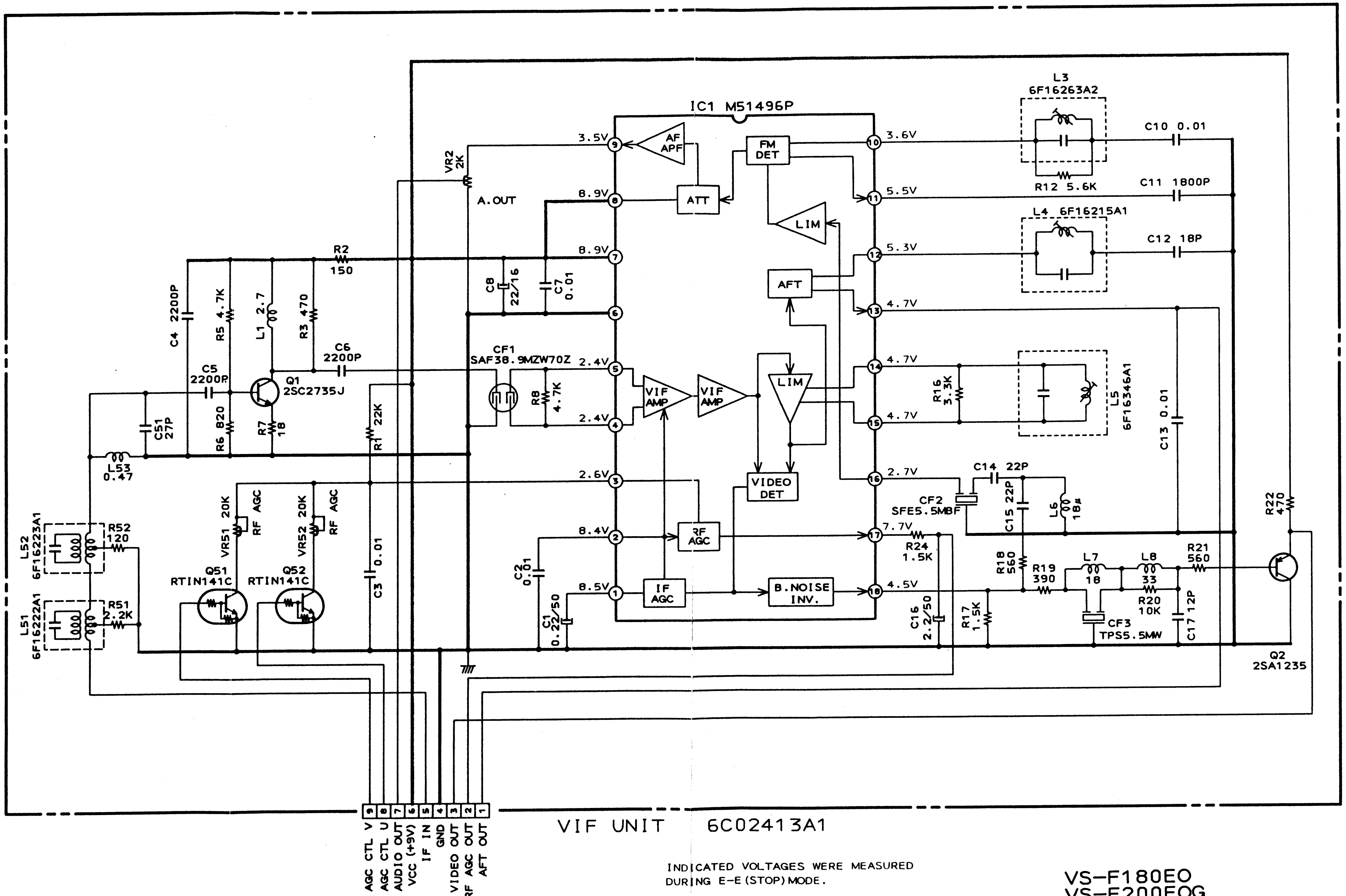
INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF
ALL INDUCTORS IN µH (K)

VS-F190EOH
VS-F220EOH
VS-F222EA
VS-F230EOH
VS-F240ES

VIF UNIT
SCHEMATIC DIAGRAM

No.14-10 V113021M
A2


IC1 M51496P
AF APF
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
3.5V
8.9V
8.9V
2.4V
2.4V
2.6V
8.4V
8.5V
3.6V
5.5V
5.3V
4.7V
4.7V
4.7V
2.7V
7.7V
4.5V
VR2 2K
A.OUT
R2 150
C8 22/16
C7 0.01
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
Q1 2SC2735J
CF1 SAF38.9MZW70Z
R8 4.7K
R1 22K
C51 27P
R6 820
R7 18
L53 0.47
L52 6F16223A1
R52 120
L51 6F16222A1
R51 2.2K
VR51 20K
RF AGC
VR52 20K
RF AGC
Q51 RTIN141C
Q52 RTIN141C
C3 0.01
C2 0.01
C1 0.22/50
L3 6F16263A2
C10 0.01
R12 5.6K
C11 1800P
L4 6F16215A1
C12 18P
R16 3.3K
L5 6F16346A1
C13 0.01
C14 22P
CF2 SFE5.5MBF
C15 22P
L6 18µ
R24 1.5K
R18 560
R19 390
L7 18
L8 33
R21 560
R22 470
R20 10K
C16 2.2/50
R17 1.5K
CF3 TPS5.5MW
C17 12P
Q2 2SA1235
9 AGC CTL V
8 AGC CTL U
7 AUDIO OUT
6 VCC (+9V)
5 IF IN
4 GND
3 VIDEO OUT
2 RF AGC OUT
1 AFT OUT
VIF UNIT 6C02413A1

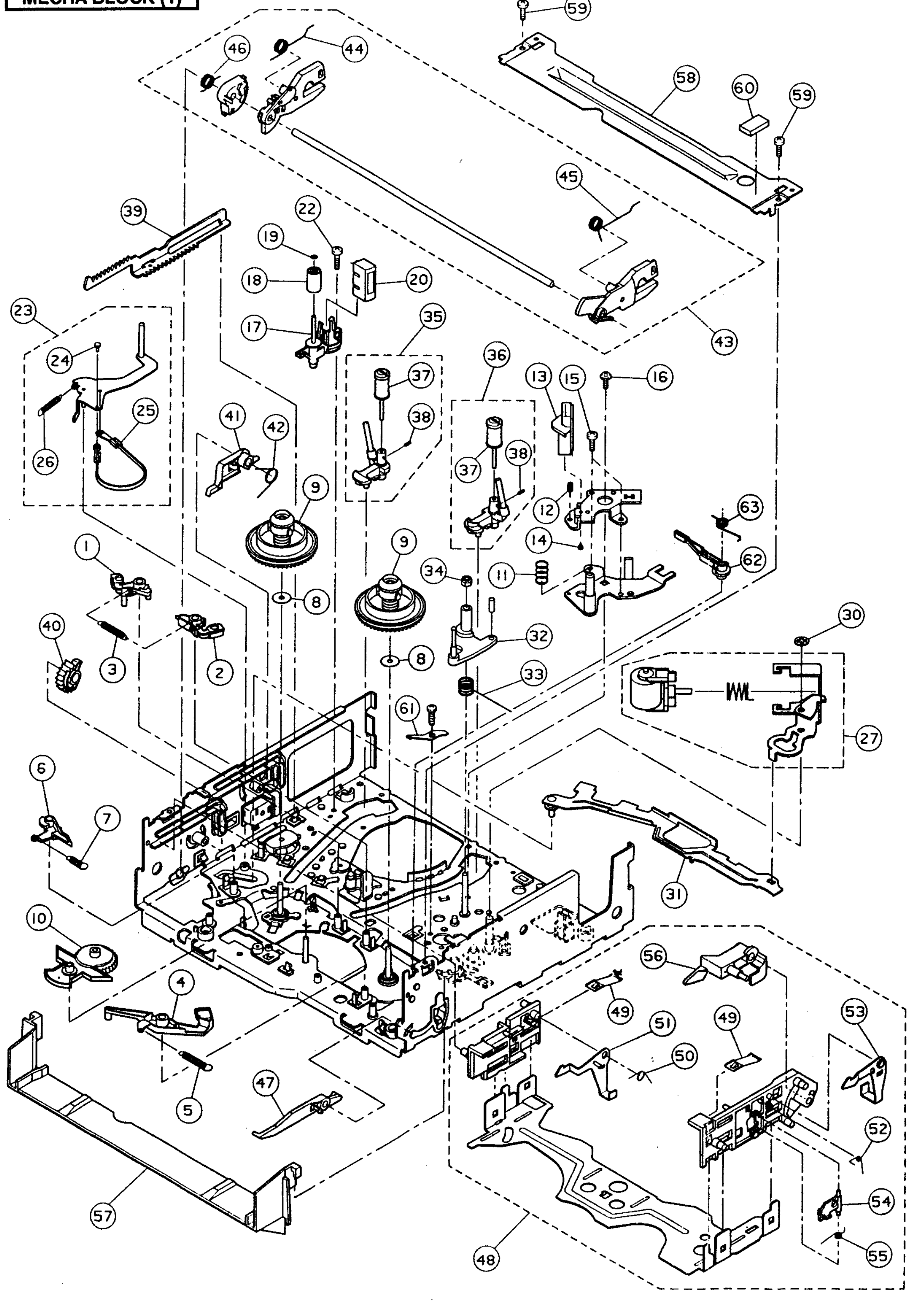
INDICATED VOLTAGES WERE MEASURED DURING E-E (STOP) MODE.

━━━ B (POWER SUPPLY) LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL CAPACITORS IN µF 50 WV (J)
ALL INDUCTORS IN µH (K)

VS-F180EO
VS-F200EOG
VIF UNIT
SCHEMATIC DIAGRAM
No.14-11 V113022M A3

MECHA BLOCK (1)



3. MECHA BLOCK (1)

Ref.No.	Part No.	Description
1	ML-387316J	MAIN BRAKE (S) PART
2	ML-387318J	MAIN BRAKE (T) PART
3	ZG-387320J	SP PULL MAIN BRAKE
4	ML-387321J	REVIEW BRAKE PART
5	ZG-387323J	SP PULL REVIEW BRAKE
6	ML-387423J	ARM LOADING BRAKE
7	ZG-387467J	SP PULL LOADING BRAKE
8	ZW-389814J	PW31X110X050PSL
9	MT-390954J1	DISK (2) PART
10	MI-387294J	IDLLER PART
11	ZG-387438J1	SP PUSH A/C
12	ZG-373900	6SET30X080SCM PKR CP
13	HR-405340J	HEAD COMBO HVMZA1121A
14	ZS-404844J	PAN20X02STL BZN PS1
15	ZS-321298	BID30X08STL CMT
16	ZS-389853J	DT BID30X06STL CMT C080
17	MZ-402760J	HOLDER FE HEAD PART B
18	MR-387286J1	ROLLER IMPEDANCE
19	ZW-374445	SLIT W17X032X025PSL
20	HE-390013J	HEAD E HVFME0020A
22	ZS-336714	ST BID30X12STL CMT
23	BL-V1102A050A	TENSION ARM BLK 425EA
24	SZ-387263J3	HOLDER LEVER TENSION
25	ML-390768J2	TENSION BAND PART
26	ZG-387272J	SP PULL TENSION
27	BL-V1102A160A	ARM PINCH ROLLER (2) BLK 425EA
30	ZW-332843	RETAINING RING GRIP 380STL ACP
31	ML-387431J1	SLIDER PINCH PART
32	ML-387277J3	ARM REVIEW PART
33	ZG-387282J	SP TORSION REVIEW
34	ZW-401776J	NUT REVIEW
35	BV-V1102A070A	LEADER S BLK 425EA
36	BV-V1102A080A	LEADER T BLK 425EA
37	VT-387394J1	GUIDE ROLLER D8 PART
38	ZS-374458	6SET20X030SCM PKR FP
39	ML-387428J	SLIDER FRONT LOADING
40	MZ-387335J	GEAR EJECT
41	ML-391745J2	ARM DAMPER
42	ZG-395567J	SP TORSION ARM DAMPER
43	BL-V1102A140A	ARM LOADING BLK 425EA
44	ZG-387417J	SP TORSION LOAD (S)
45	ZG-387418J	SP TORSION LOAD (T)
46	ZG-392831J	SP TORSION JOINT (2)
47	ML-387350J1	ARM LID OPENER
48	BV-V1102A150A	CASSETTE LOAD BLK 425EA
49	ZG-387348J1	SP PLATE HOLDER
50	ZG-387421J	SP TORSION DAMPER (S)
51	ML-387345J	LEVER DAMPER (S)
52	ZG-388290J1	SP TORSION DAMPER (T)
53	ML-387346J	LEVER DAMPER (T)
54	ML-387344J	LEVER LOCK RELEASE
55	ZG-387420J	SP TORSION RELEASE
56	ML-387349J2	ARM SHUTTER
57	SE-395554J	GUIDE FRONT (2)
58	MZ-387351J1	PLATE UPPER
59	ZS-358936	ST BID30X06STL CMT
60	SZ-391866J1	CUSHION COVER
61	ZG-392294J	SP PLATE EARTH
62	MZ-404539J	REW BRAKE PART
63	ZG-404541J	SP TORSION REW BRAKE
64	BB-V1130A020A	MECHA DECK BLK F220EA

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

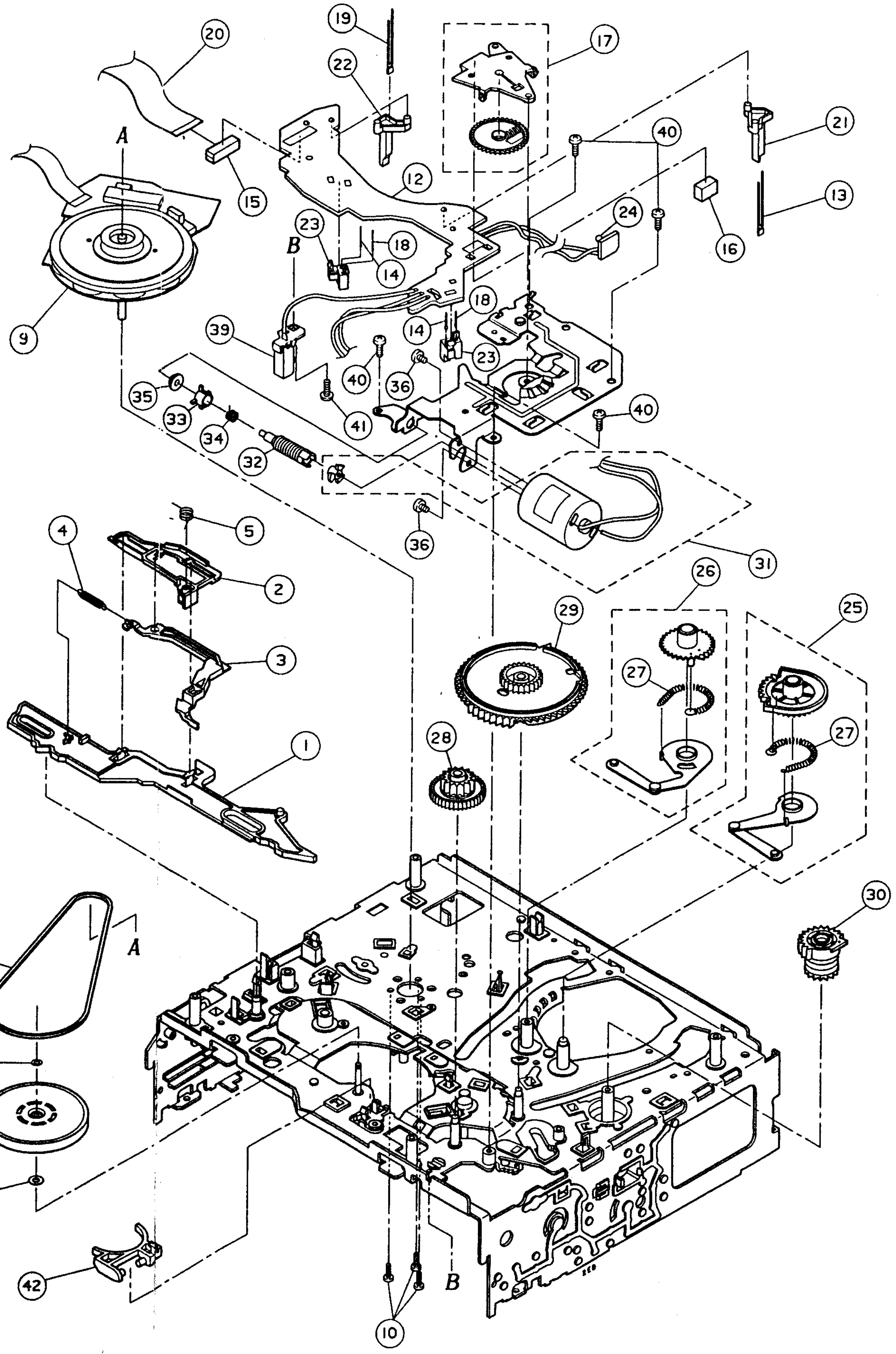
4. MECHA BLOCK (2)

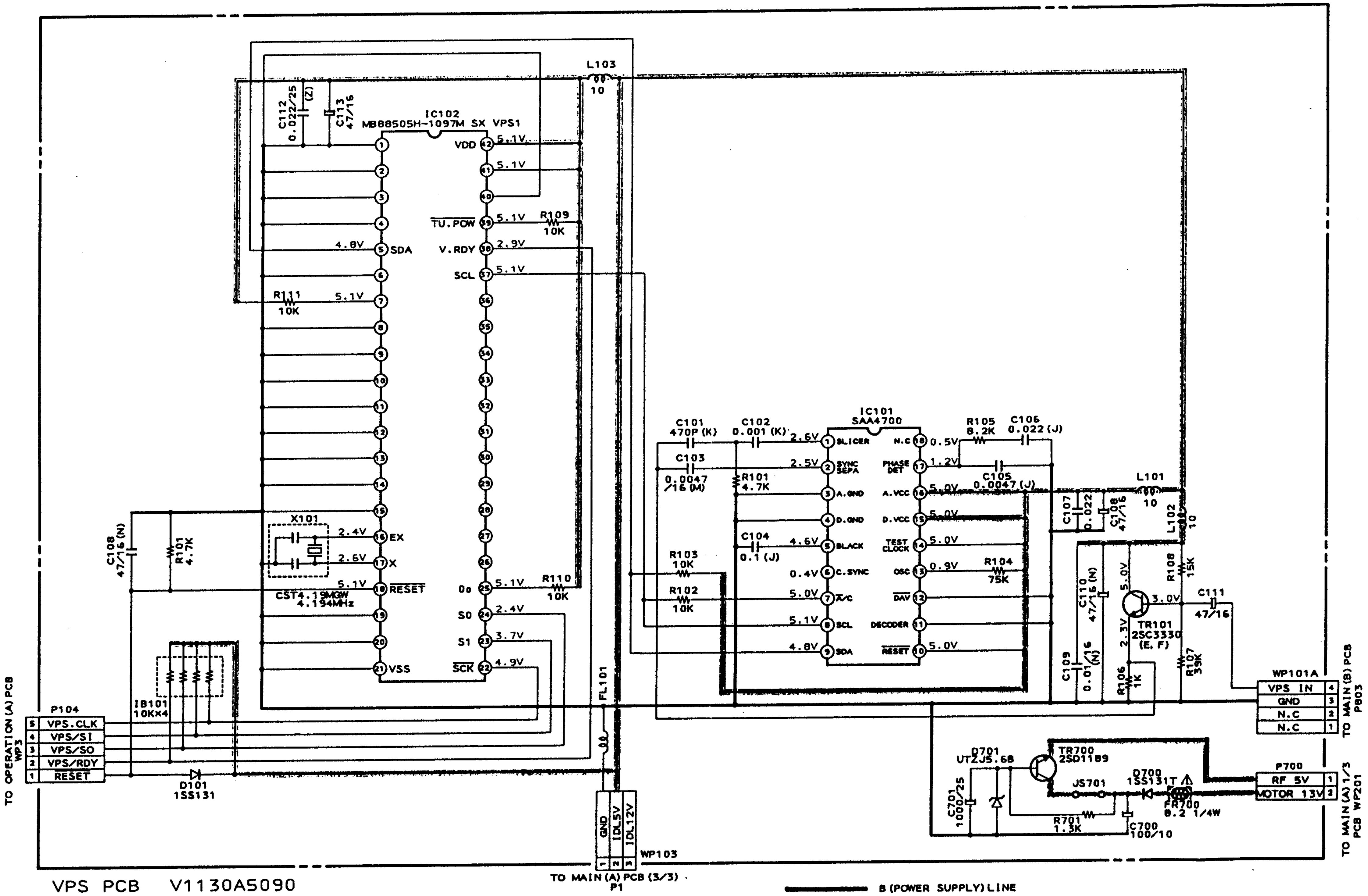
Ref.No.	Part No.	Description
1	ML-387324J	SLIDER BRAKE PART
2	ML-404944J	SLIDER TRIGGER (2)
3	ML-387402J1	LEVER TRIGGER
4	ZG-387468J	SP PULL SLIDER
5	ZG-387403J	SP TORSION COUPLING
6	ZW-389923J	PW26X060X050PSL
7	MZ-387298J3	DISK CLUTCH PART
8	ZW-387492J	SLIT W21X040X050PSL
9	BM-400682J1	MOTOR DFX-67B3VWB1 [CAPSTAN MOTOR]
10	ZS-365149	PT BID26X06STL CMT
11	MB-387289J	BELT CAPSTAN
12	EA-387496J	PC (#) SENSOR
13	ED-390011J	D LED GL451 INFRARED [D1]
14	ED-390012J	D LED GL4800 INFRARED [D2]
15	EJ-387497J	SOCKET HOUSING 5062-30-10-13 [PS1]
16	EJ-381837J	SOCKET 174074-5 5P [P1]
17	ES-387465J	SW MODE SELECT MMS00070ZLBO [SW1]
18	ET-390010J	TR PHOTO PT4800 [TR2]
19	ET-390009J	TR PHOTO PT493F [TR4]
20	EW-389313J	CORD FFC P1.25 L=120 13P [WP1]
21	MZ-387430J	HOLDER D-LED
22	MZ-387445J	HOLDER S SENSOR
23	MZ-387446J	HOLDER PHOTO SENSOR
24	ET-361490	TR PHOTO PN268 [TR1]
25	MZ-V1102A090A	GEAR TOGGLE (S) BLK 425EA
26	MZ-V1102A100A	GEAR TOGGLE (T) BLK 425EA
27	ZG-387413J1	SP PULL TOGGLE
28	MZ-387332J	GEAR WORM WHEEL
29	MZ-387331J	GEAR CAM SLIDER
30	MZ-387333J	GEAR FRONT LOADING
31	BM-387503J	MOTOR PART [LOADING MOTOR]
32	MZ-401686J	GEAR WORM (2)
33	MR-391968J	PULLEY TRIGGER (2)
34	ZG-387443J	SP TRIGGER
35	MR-404544J	HOLDER THRUST WORM (2)
36	ZS-425981	BID30X03STL CMT
39	ES-373099	SW LEAF MTS10110MPC1
40	ZS-389950J	PT BID26X10STL CMT
41	ZS-358936	ST BID30X06STL CMT
42	ML-387311J2	ARM COUPLING

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHA BLOCK (2)





IC102
MB88505H-1097M SX VPS1
C112 0.022/25 (Z)
C113 47/16
L103 10
VDD
TU.POW
V.RDY
SCL
SDA
EX
X
RESET
VSS
SCK
S0
S1
Oø
5.1V
2.9V
4.8V
2.4V
2.6V
3.7V
4.9V
R109 10K
R110 10K
R111 10K
X101
CST4.19MGW 4.194MHz
C108 47/16 (N)
R101 4.7K
IB101 10K×4
P104
VPS.CLK
VPS/SI
VPS/SO
VPS/RDY
RESET
TO OPERATION (A) PCB WP3
D101 1SS131
FL101
GND
IDL5V
IDL12V
WP103
TO MAIN (A) PCB (3/3) P1
IC101
SAA4700
SLICER
SYNC SEPA
A.GND
D.GND
BLACK
C.SYNC
X/C
SCL
SDA
N.C
PHASE DET
A.VCC
D.VCC
TEST CLOCK
OSC
DAV
DECODER
RESET
C101 470P (K)
C102 0.001 (K)
C103 0.0047 /16 (M)
C104 0.1 (J)
C105 0.0047 (J)
C106 0.022 (J)
R101 4.7K
R102 10K
R103 10K
R104 75K
R105 8.2K
2.6V
2.5V
4.6V
0.4V
5.0V
5.1V
4.8V
0.5V
1.2V
0.9V
L101 10
L102 10
C107 0.022
C108 47/16
C109 0.01/16 (N)
C110 47/16 (N)
C111 47/16
R106 1K
R107 33K
R108 15K
TR101 2SC3330 (E, F)
3.0V
2.3V
WP101A
VPS IN
GND
N.C
N.C
TO MAIN (B) PCB P803
TR700 2SD1189
D701 UTZJ5.6B
C701 1000/25
JS701
D700 1SS131T ⚠
FR700 8.2 1/4W
R701 1.3K
C700 100/10
P700
RF 5V
MOTOR 13V
TO MAIN (A) 1/3 PCB WP201

VPS PCB V1130A5090

▬ B (POWER SUPPLY) LINE

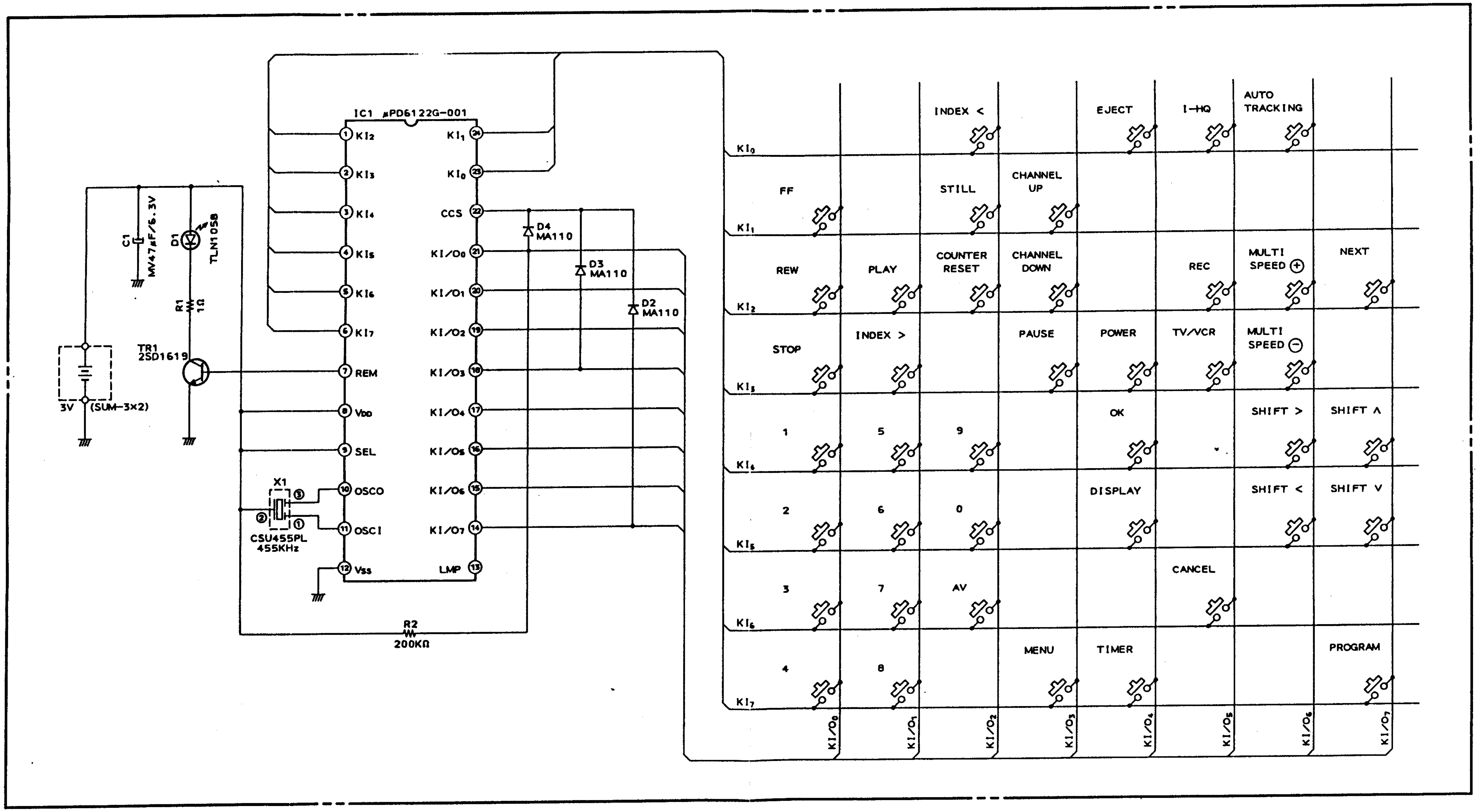
INDICATED VOLTAGES WERE MEASURED
IN STOP MODE.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH

WARNING: ⚠ AND ■ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

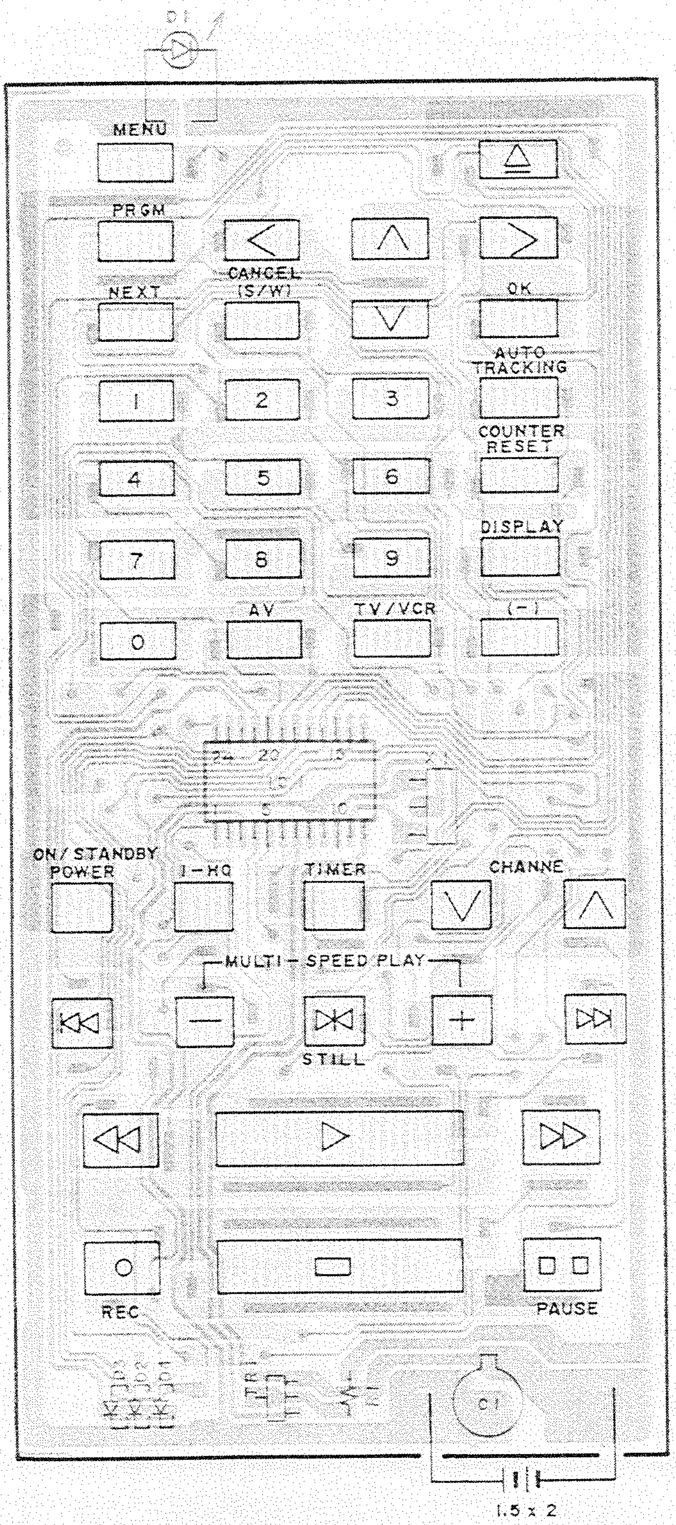
AVERTISSMENT: ⚠ ET ■, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-F200EOG
VPS
SCHEMATIC DIAGRAM
No.14-12 V113023M
A3

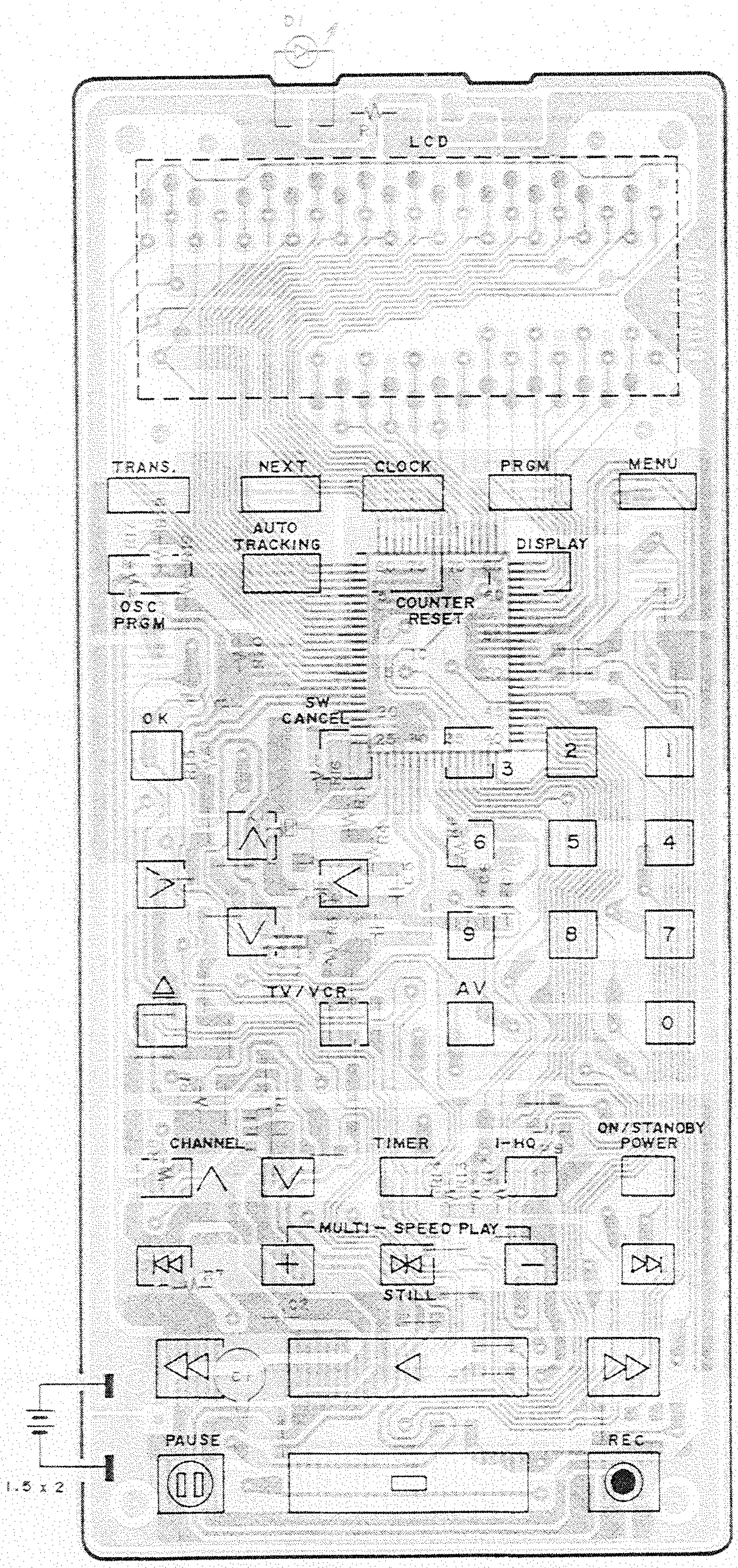

IC1 µPD6122G-001
1 KI2
2 KI3
3 KI4
4 KI5
5 KI6
6 KI7
7 REM
8 VDD
9 SEL
10 OSCO
11 OSCI
12 VSS
24 KI1
23 KI0
22 CCS
21 KI/O0
20 KI/O1
19 KI/O2
18 KI/O3
17 KI/O4
16 KI/O5
15 KI/O6
14 KI/O7
13 LMP
D4 MA110
D3 MA110
D2 MA110
C1 MV47µF/6.3V
D1 TLN105B
R1 1Ω
TR1 2SD1619
3V (SUM-3×2)
X1
CSU455PL 455KHz
R2 200KΩ
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
INDEX <
EJECT
I-HQ
AUTO TRACKING
FF
STILL
CHANNEL UP
REW
PLAY
COUNTER RESET
CHANNEL DOWN
REC
MULTI SPEED ⊕
NEXT
STOP
INDEX >
PAUSE
POWER
TV/VCR
MULTI SPEED ⊖
1
5
9
OK
SHIFT >
SHIFT ∧
2
6
0
DISPLAY
SHIFT <
SHIFT V
3
7
AV
CANCEL
4
8
MENU
TIMER
PROGRAM
KI/O0
KI/O1
KI/O2
KI/O3
KI/O4
KI/O5
KI/O6
KI/O7

REMO-CON PCB B1022B5010

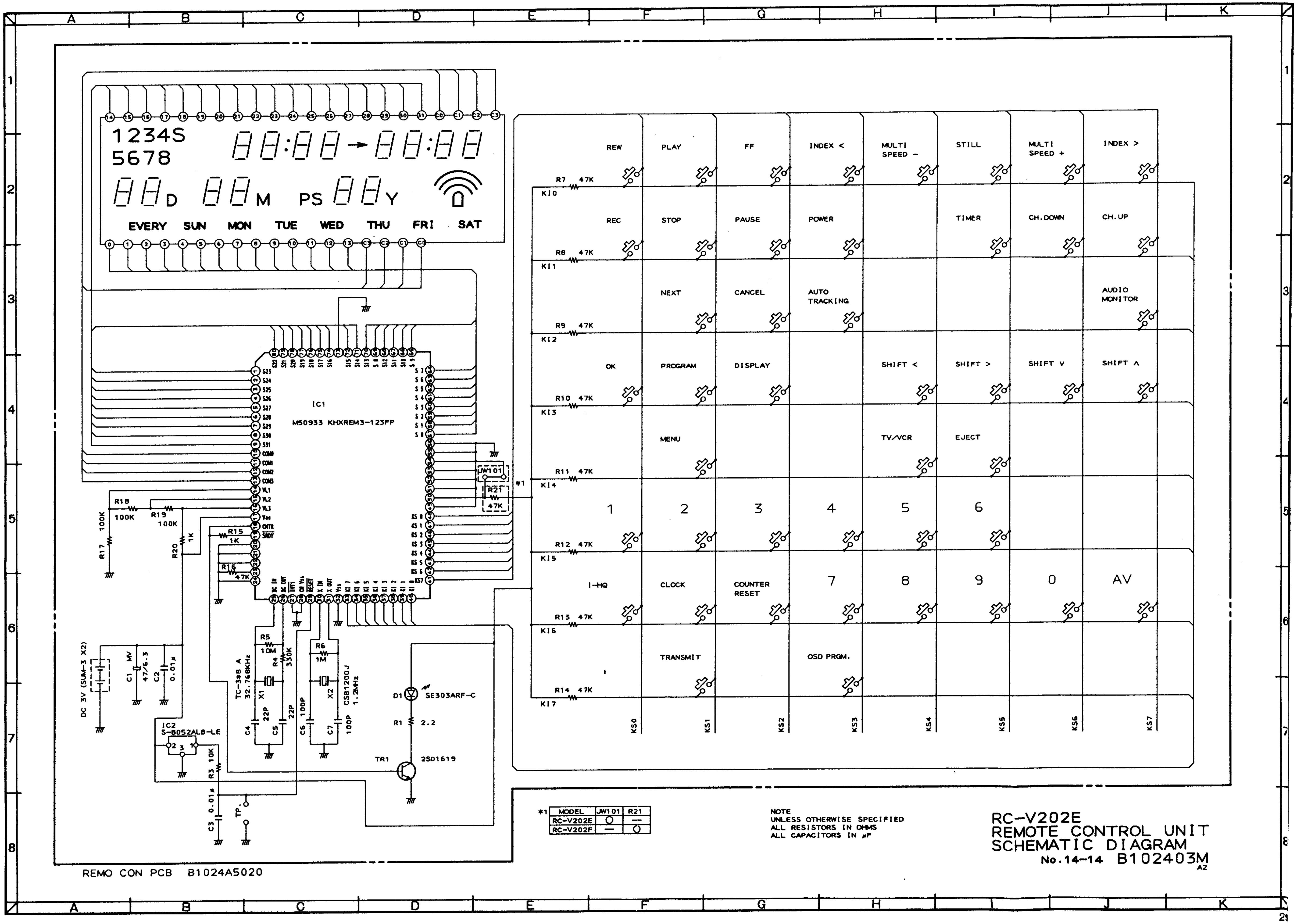
RC-V200E/V200G
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.14-13 B102201M
A2


D1
MENU
PRGM
CANCEL (S/W)
NEXT
OK
AUTO TRACKING
1
2
3
COUNTER RESET
4
5
6
DISPLAY
7
8
9
0
AV
TV/VCR
(-)
24
20
15
10
5
ON/STANDBY POWER
I-HQ
TIMER
CHANNEL
MULTI - SPEED PLAY
STILL
REC
PAUSE
C1
1.5 x 2

REMO-CON PCB B1022B5010


D1
LCD
TRANS.
NEXT
CLOCK
PRGM
MENU
AUTO TRACKING
DISPLAY
OSC PRGM
COUNTER RESET
SW CANCEL
OK
1
2
3
4
5
6
7
8
9
0
△
TV/VCR
AV
CHANNEL
TIMER
I-HQ
ON/STANDBY POWER
MULTI - SPEED PLAY
STILL
PAUSE
REC
1.5 x 2

REMO - CON PCB BI024A5020


1234S
5678
EVERY
SUN
MON
TUE
WED
THU
FRI
SAT
D
M
PS
Y
IC1
M50933 KHXREM3-123FP
R7 47K
R8 47K
R9 47K
R10 47K
R11 47K
R12 47K
R13 47K
R14 47K
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
KS0
KS1
KS2
KS3
KS4
KS5
KS6
KS7
REW
PLAY
FF
INDEX <
MULTI SPEED −
STILL
MULTI SPEED +
INDEX >
REC
STOP
PAUSE
POWER
TIMER
CH.DOWN
CH.UP
NEXT
CANCEL
AUTO TRACKING
AUDIO MONITOR
OK
PROGRAM
DISPLAY
SHIFT <
SHIFT >
SHIFT V
SHIFT Λ
MENU
TV/VCR
EJECT
1
2
3
4
5
6
I-HQ
CLOCK
COUNTER RESET
7
8
9
0
AV
TRANSMIT
OSD PRGM.
JW101
R21
47K
*1
R18
100K
R19
100K
R17
100K
R20
1K
R15
1K
R16
47K
R5
10M
R4
330K
R6
1M
TC-3*8 A
32.768KHz
X1
C4
22P
C5
22P
CSB1200J
1.2MHz
X2
C6
100P
C7
100P
D1
SE303ARF-C
R1
2.2
TR1
2SD1619
DC 3V (SUM-3 X2)
C1
MV
47/6.3
C2
0.01μ
IC2
S-8052ALB-LE
R3
10K
C3
0.01μ
TP.

*1

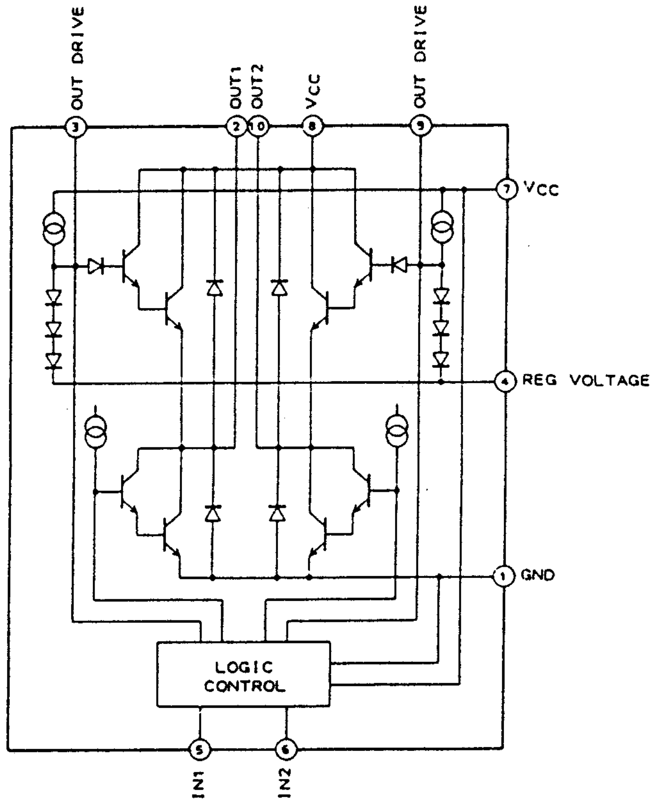
MODEL	JW101	R21
RC-V202E	○	—
RC-V202F	—	○

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF

RC-V202E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.14-14 B102403M A2

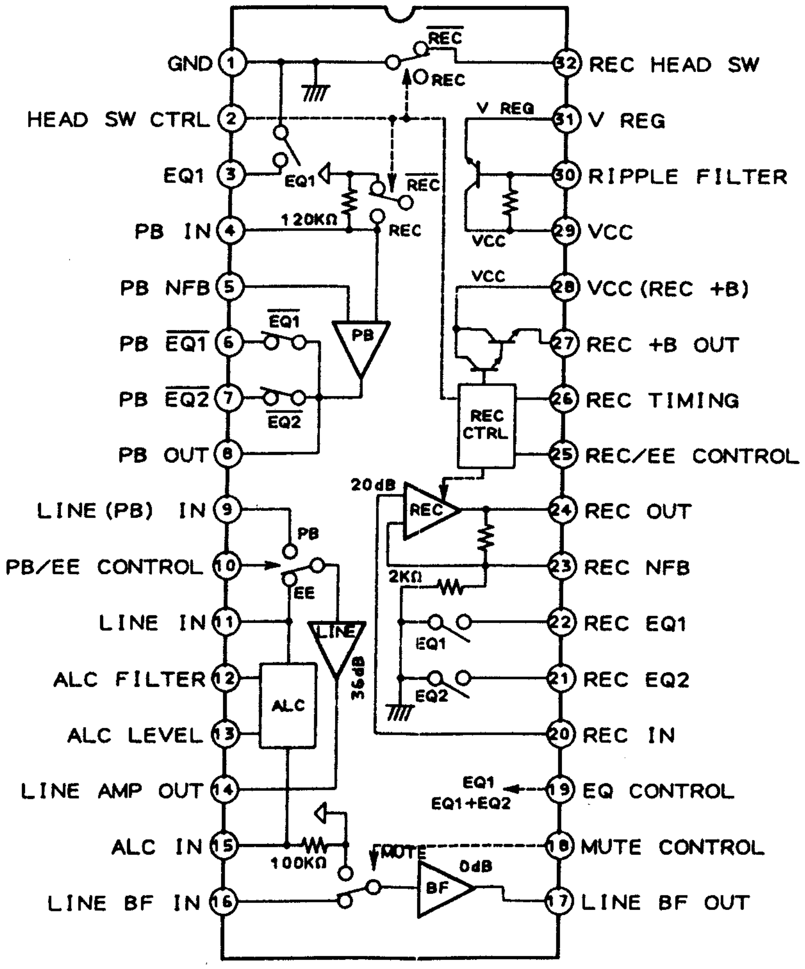
REMO CON PCB B1024A5020

BA6229 (BI-DIRECTIONAL MOTOR DRIVE)

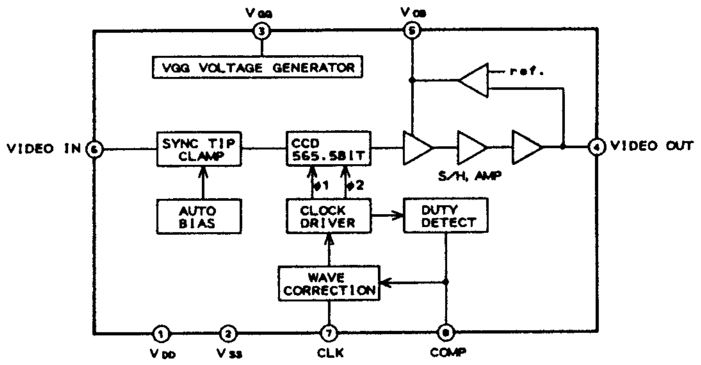

OUT DRIVE
OUT1
OUT2
VCC
OUT DRIVE
3
2
10
8
9
7 VCC
4 REG VOLTAGE
1 GND
LOGIC CONTROL
5
6
IN1
IN2

INPUT		OUTPUT		MODE
⑤	⑥	②	⑩	
H	H	L	L	BRAKE
L	H	L	H	CASSETTE & TAPE LOADING
H	L	H	L	CASSETTE & TAPE UNLOADING
L	L	OPEN	OPEN	STOP

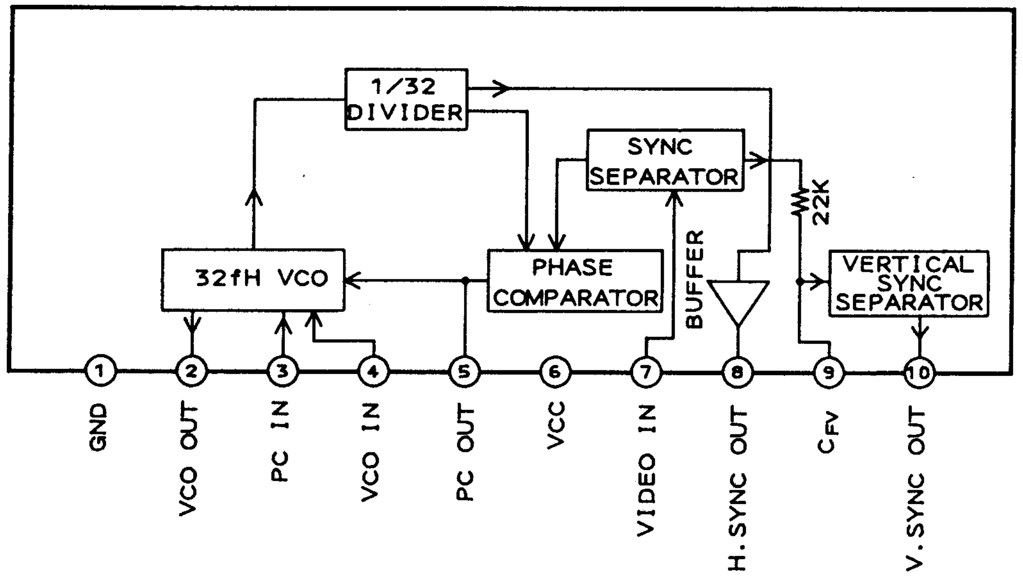
BA7765AS (AUDIO SIGNAL REC/PB AMPLIFIER)


GND 1
HEAD SW CTRL 2
EQ1 3
PB IN 4
PB NFB 5
PB EQ1 6
PB EQ2 7
PB OUT 8
LINE (PB) IN 9
PB/EE CONTROL 10
LINE IN 11
ALC FILTER 12
ALC LEVEL 13
LINE AMP OUT 14
ALC IN 15
LINE BF IN 16
32 REC HEAD SW
31 V REG
30 RIPPLE FILTER
29 VCC
28 VCC (REC +B)
27 REC +B OUT
26 REC TIMING
25 REC/EE CONTROL
24 REC OUT
23 REC NFB
22 REC EQ1
21 REC EQ2
20 REC IN
19 EQ CONTROL
18 MUTE CONTROL
17 LINE BF OUT
REC
REC
V REG
EQ1
REC
120KΩ
REC
VCC
VCC
EQ1
PB
EQ2
REC CTRL
20dB
REC
PB
EE
2KΩ
EQ1
EQ2
LINE
36dB
ALC
EQ1
EQ1+EQ2
100KΩ
MUTE
0dB
BF

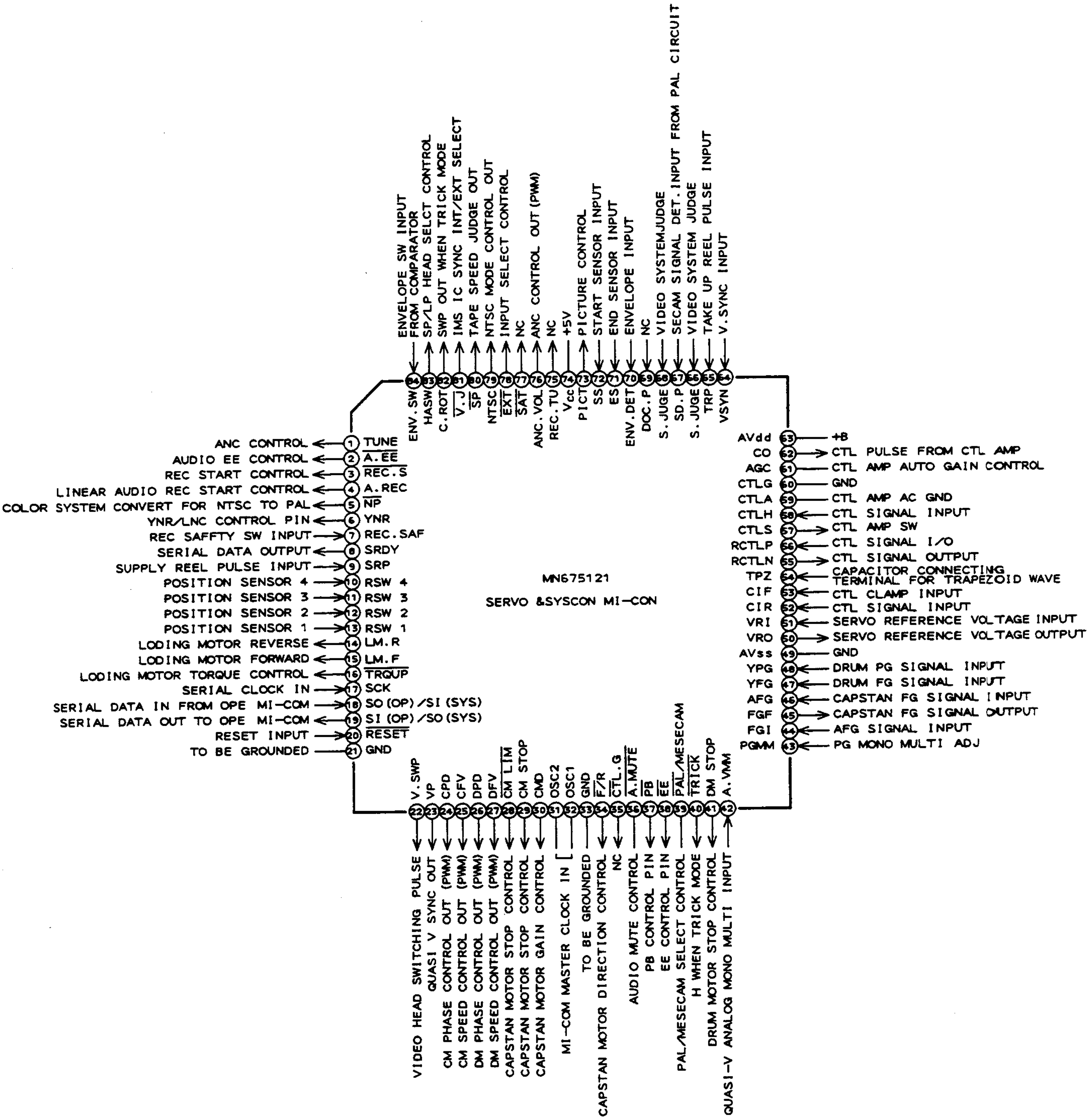
LC8992 (CCD 1H DELAY LINE)


VGG
VOB
3
5
VGG VOLTAGE GENERATOR
ref.
VIDEO IN 6
SYNC TIP CLAMP
CCD 565.5BIT
4 VIDEO OUT
S/H, AMP
ϕ1
ϕ2
AUTO BIAS
CLOCK DRIVER
DUTY DETECT
WAVE CORRECTION
1
2
7
8
VDD
VSS
CLK
COMP

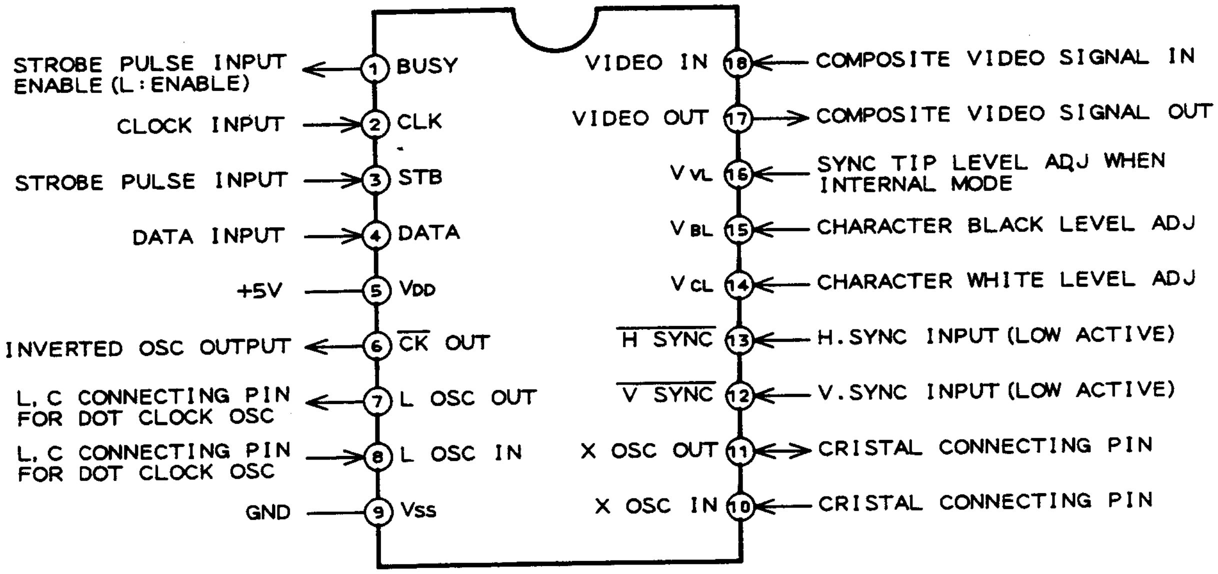
MM1068XS (SYNC SEPARATOR)


1/32 DIVIDER
SYNC SEPARATOR
22K
32fH VCO
PHASE COMPARATOR
BUFFER
VERTICAL SYNC SEPARATOR
1
2
3
4
5
6
7
8
9
10
GND
VCO OUT
PC IN
VCO IN
PC OUT
VCC
VIDEO IN
H.SYNC OUT
CFV
V.SYNC OUT

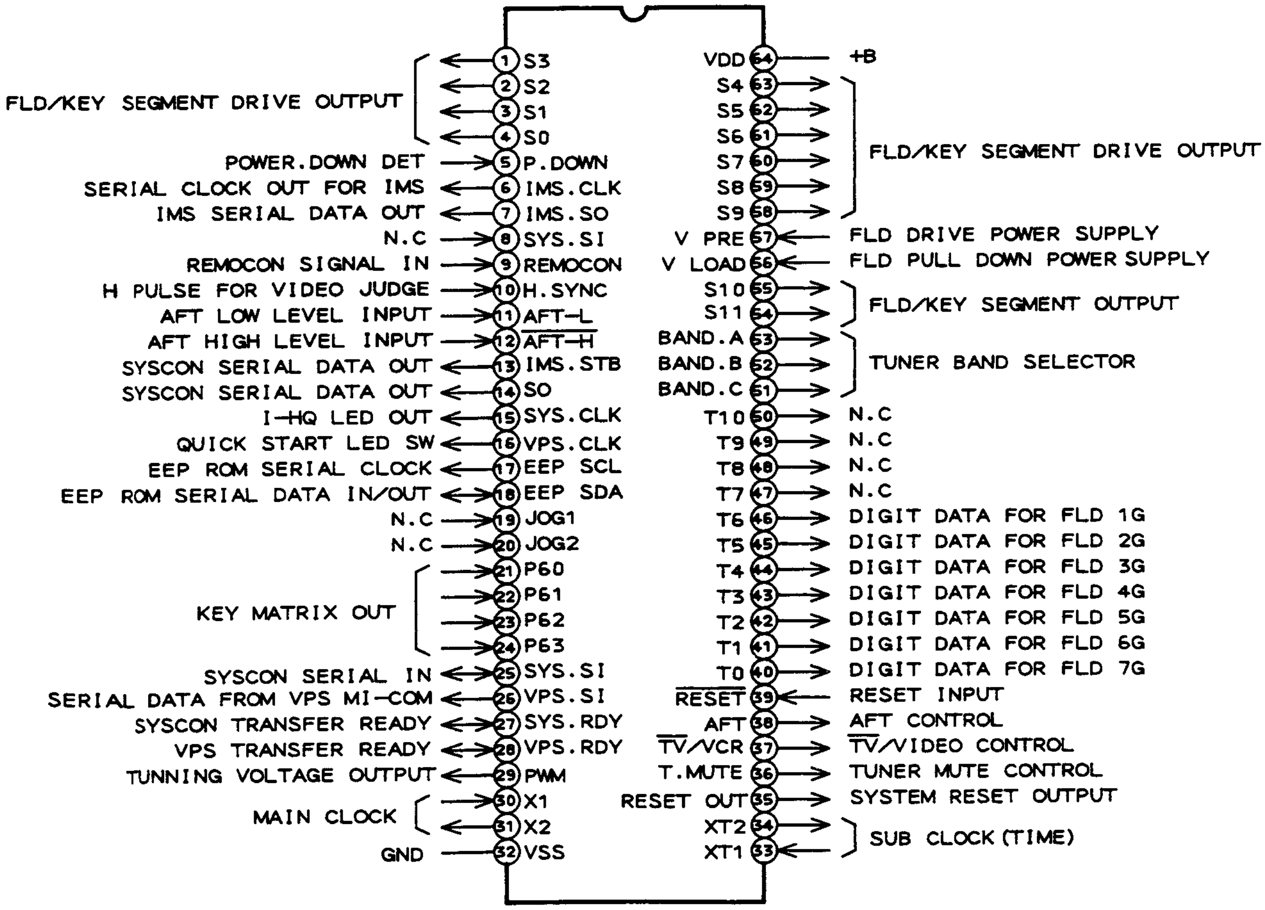
MN675121 KBXSYP3 (SERVO/SYSCON MI-COM)


MN675121
SERVO &SYSCON MI-CON
ANC CONTROL ① TUNE
AUDIO EE CONTROL ② A.EE
REC START CONTROL ③ REC.S
LINEAR AUDIO REC START CONTROL ④ A.REC
COLOR SYSTEM CONVERT FOR NTSC TO PAL ⑤ NP
YNR/LNC CONTROL PIN ⑥ YNR
REC SAFFTY SW INPUT ⑦ REC.SAF
SERIAL DATA OUTPUT ⑧ SRDY
SUPPLY REEL PULSE INPUT ⑨ SRP
POSITION SENSOR 4 ⑩ RSW 4
POSITION SENSOR 3 ⑪ RSW 3
POSITION SENSOR 2 ⑫ RSW 2
POSITION SENSOR 1 ⑬ RSW 1
LODING MOTOR REVERSE ⑭ LM.R
LODING MOTOR FORWARD ⑮ LM.F
LODING MOTOR TORQUE CONTROL ⑯ TRQUP
SERIAL CLOCK IN ⑰ SCK
SERIAL DATA IN FROM OPE MI-COM ⑱ SO (OP)/SI (SYS)
SERIAL DATA OUT TO OPE MI-COM ⑲ SI (OP)/SO (SYS)
RESET INPUT ⑳ RESET
TO BE GROUNDED ㉑ GND
㉒ V.SWP VIDEO HEAD SWITCHING PULSE
㉓ VP QUASI V SYNC OUT
㉔ CPD CM PHASE CONTROL OUT (PWM)
㉕ CFV CM SPEED CONTROL OUT (PWM)
㉖ DPD DM PHASE CONTROL OUT (PWM)
㉗ DFV DM SPEED CONTROL OUT (PWM)
㉘ CM LIM CAPSTAN MOTOR STOP CONTROL
㉙ CM STOP CAPSTAN MOTOR STOP CONTROL
㉚ CMD CAPSTAN MOTOR GAIN CONTROL
㉛ OSC2
㉜ OSC1 MI-COM MASTER CLOCK IN
㉝ GND TO BE GROUNDED
㉞ F/R CAPSTAN MOTOR DIRECTION CONTROL
㉟ CTL.G NC
㊱ A.MUTE AUDIO MUTE CONTROL
㊲ PB PB CONTROL PIN
㊳ EE EE CONTROL PIN
㊴ PAL/MESECAM PAL/MESECAM SELECT CONTROL
㊵ TRICK H WHEN TRICK MODE
㊶ DM STOP DRUM MOTOR STOP CONTROL
㊷ A.VMM QUASI-V ANALOG MONO MULTI INPUT
PGMM ㊸ PG MONO MULTI ADJ
FGI ㊹ AFG SIGNAL INPUT
FGF ㊺ CAPSTAN FG SIGNAL OUTPUT
AFG ㊻ CAPSTAN FG SIGNAL INPUT
YFG ㊼ DRUM FG SIGNAL INPUT
YPG ㊽ DRUM PG SIGNAL INPUT
AVss ㊾ GND
VRO ㊿ SERVO REFERENCE VOLTAGE OUTPUT
VRI (51) SERVO REFERENCE VOLTAGE INPUT
CIR (52) CTL SIGNAL INPUT
CIF (53) CTL CLAMP INPUT
TPZ (54) CAPACITOR CONNECTING TERMINAL FOR TRAPEZOID WAVE
RCTLN (55) CTL SIGNAL OUTPUT
RCTLP (56) CTL SIGNAL I/O
CTLS (57) CTL AMP SW
CTLH (58) CTL SIGNAL INPUT
CTLA (59) CTL AMP AC GND
CTLG (60) GND
AGC (61) CTL AMP AUTO GAIN CONTROL
CO (62) CTL PULSE FROM CTL AMP
AVdd (63) +B
(64) VSYN V.SYNC INPUT
(65) TRP TAKE UP REEL PULSE INPUT
(66) S.JUGE VIDEO SYSTEM JUDGE
(67) SD.P SECAM SIGNAL DET. INPUT FROM PAL CIRCUIT
(68) S.JUGE VIDEO SYSTEMJUDGE
(69) DOC.P NC
(70) ENV.DET ENVELOPE INPUT
(71) ES END SENSOR INPUT
(72) SS START SENSOR INPUT
(73) PICT PICTURE CONTROL
(74) Vcc +5V
(75) REC.TU NC
(76) ANC.VOL ANC CONTROL OUT (PWM)
(77) SAT NC
(78) EXT INPUT SELECT CONTROL
(79) NTSC NTSC MODE CONTROL OUT
(80) SP TAPE SPEED JUDGE OUT
(81) V.J IMS IC SYNC INT/EXT SELECT
(82) C.ROT SWP OUT WHEN TRICK MODE
(83) HASW SP/LP HEAD SELCT CONTROL
(84) ENV.SW ENVELOPE SW INPUT FROM COMPARATOR

μPD6450 (CHARACTER GENERATOR)


STROBE PULSE INPUT ENABLE (L: ENABLE) ← 1 BUSY
CLOCK INPUT → 2 CLK
STROBE PULSE INPUT → 3 STB
DATA INPUT → 4 DATA
+5V — 5 VDD
INVERTED OSC OUTPUT ← 6 CK OUT
L, C CONNECTING PIN FOR DOT CLOCK OSC ← 7 L OSC OUT
L, C CONNECTING PIN FOR DOT CLOCK OSC → 8 L OSC IN
GND — 9 Vss
VIDEO IN 18 ← COMPOSITE VIDEO SIGNAL IN
VIDEO OUT 17 → COMPOSITE VIDEO SIGNAL OUT
VVL 16 ← SYNC TIP LEVEL ADJ WHEN INTERNAL MODE
VBL 15 ← CHARACTER BLACK LEVEL ADJ
VCL 14 ← CHARACTER WHITE LEVEL ADJ
H SYNC 13 ← H.SYNC INPUT (LOW ACTIVE)
V SYNC 12 ← V.SYNC INPUT (LOW ACTIVE)
X OSC OUT 11 ↔ CRISTAL CONNECTING PIN
X OSC IN 10 ← CRISTAL CONNECTING PIN

μPD75216ACW (OPERATION MI-COM)


FLD/KEY SEGMENT DRIVE OUTPUT ← 1 S3, 2 S2, 3 S1, 4 S0
POWER.DOWN DET → 5 P.DOWN
SERIAL CLOCK OUT FOR IMS ← 6 IMS.CLK
IMS SERIAL DATA OUT ← 7 IMS.SO
N.C → 8 SYS.SI
REMOCON SIGNAL IN → 9 REMOCON
H PULSE FOR VIDEO JUDGE → 10 H.SYNC
AFT LOW LEVEL INPUT → 11 AFT-L
AFT HIGH LEVEL INPUT → 12 AFT-H
SYSCON SERIAL DATA OUT ← 13 IMS.STB
SYSCON SERIAL DATA OUT ← 14 SO
I-HQ LED OUT ← 15 SYS.CLK
QUICK START LED SW ← 16 VPS.CLK
EEP ROM SERIAL CLOCK ← 17 EEP SCL
EEP ROM SERIAL DATA IN/OUT ↔ 18 EEP SDA
N.C → 19 JOG1
N.C → 20 JOG2
KEY MATRIX OUT → 21 P60, 22 P61, 23 P62, 24 P63
SYSCON SERIAL IN ↔ 25 SYS.SI
SERIAL DATA FROM VPS MI-COM ← 26 VPS.SI
SYSCON TRANSFER READY ↔ 27 SYS.RDY
VPS TRANSFER READY ↔ 28 VPS.RDY
TUNNING VOLTAGE OUTPUT ← 29 PWM
MAIN CLOCK → 30 X1, ← 31 X2
GND — 32 VSS
VDD 64 — +B
FLD/KEY SEGMENT DRIVE OUTPUT → 63 S4, 62 S5, 61 S6, 60 S7, 59 S8, 58 S9
V PRE 57 ← FLD DRIVE POWER SUPPLY
V LOAD 56 ← FLD PULL DOWN POWER SUPPLY
FLD/KEY SEGMENT OUTPUT → 55 S10, 54 S11
TUNER BAND SELECTOR → 53 BAND.A, 52 BAND.B, 51 BAND.C
T10 50 → N.C
T9 49 → N.C
T8 48 → N.C
T7 47 → N.C
T6 46 → DIGIT DATA FOR FLD 1G
T5 45 → DIGIT DATA FOR FLD 2G
T4 44 → DIGIT DATA FOR FLD 3G
T3 43 → DIGIT DATA FOR FLD 4G
T2 42 → DIGIT DATA FOR FLD 5G
T1 41 → DIGIT DATA FOR FLD 6G
T0 40 → DIGIT DATA FOR FLD 7G
RESET 39 ← RESET INPUT
AFT 38 ← AFT CONTROL
TV/VCR 37 → TV/VIDEO CONTROL
T.MUTE 36 → TUNER MUTE CONTROL
RESET OUT 35 → SYSTEM RESET OUTPUT
SUB CLOCK (TIME) → 34 XT2, ← 33 XT1

ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio or Analogue
AC	Alternating Current
ACC	Automatic Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AH	Audio Head
AL	ALways (voltage)
ALC	Automatic Level Control
A-SW.P	Audio SWitching Pulse
A-MUTE	Audio MUTE
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLocK or BLacK
BPF	Band Pass Filter
BU	Back Up (voltage)
B/W	Black and White
C	Chroma or Color
CCD	Charge Coupled Device
CCIR	Comité Consultatif International des Radio communications
CH (ch)	CHannel (channel)
CLK	CLocK
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
CSW	Cassette SWitch
CSYNC	Composite SYNC
CTL	ConTrol
CUE	CUE
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETetct (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D.P.E	Drum Phase Error
D.PG	Drum Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EP ROM	Erasable Programmable ROM
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig	Figure
FLD	FLuorescent Display
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
GND	GrouND
H	Horizontal
HP	Horizontal (sync) pulse
HPF	High Pass Filter
HQ	High Quality System
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
IMS	Interactive Monitor System
INS	INSert
INV	INVerter
L	Left
LED	Light Emitting Diode
LIM	LIMitter
LM	Loading Motor
LM STP	Loading Motor STop
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-staybIe Multi
MOD	MODulator
MRS	Motor ReverSe
NG	Noise Gate
NICAM	Near Instanteneous Compand Audio Multiplex
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
OSC	OSCillator
PAL	Phase Alternation by Line
PB	Play Back
PCB (P.C.B)	Printed Circuit Board
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
P.I.P	Picture In Picture
PL, PLG	PLunger (PLunGer)
PRG (PGM)	PRoGram (ProGraM)
PU	Pick UP (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
RAM	Random Access Memory
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
ROM	Read Only Memory
R.S SW	Record-Safety SWitch
RST (RES)	ReSet (RESet)
RVS	ReVerSe
S	Sensor, Shield
SAW	Surface Acoustic Wave
SC	SimulCast
S CLK	Serial CLocK
SECAM	SÉquentiel Couleur À Mémoire
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
S.VHS	Super VHS
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated (voltage)
V	Vertical or Video
VASS	Video Address Search System
VCO	Voltage Controlled Oscillator
VH	Video Head
VHF	Very High Frequency
VHS	Video Home System
VIF	Video Intermediate Frequency
VISS	Video Index Search System
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VPS	Video Program System
VPT	Video Programming by video Text
VT	Voltage for Tuning
WHT	WHiTe
Y	Luminance
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)